

Analysis on the Impact of English Teachers' Continuing Professional Development (CPD) on Teaching Ability: A Case Study of Applied Undergraduate Colleges in Henan Province

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Abstract

Background and purpose: With the rapid development of higher education in China and the rise of applied undergraduate colleges, the continuing professional development (CPD) of English teachers is becoming increasingly important. This study aims to explore in depth the impact of CPD on the teaching ability of English teachers in applied undergraduate colleges in Henan Province, analyse teachers' attitudes towards and participation in CPD and its effectiveness, and examine the role of demographic characteristics and teacher creativity in this process. *Method:* A mixed research method was used, combining quantitative and qualitative analysis. A questionnaire survey was conducted among 294 English teachers (with a 85.5% response rate) from 10 applied undergraduate colleges in Henan Province. The questionnaire included aspects such as teachers' background information, frequency of CPD participation, attitudes towards CPD, and perceived teaching ability. In addition, 20 semi-structured interviews and four focus group discussions (24 participants in total) were conducted to obtain more in-depth qualitative data. Descriptive statistics, correlation analysis and multiple regression analysis were performed using SPSS software, and Hayes' PROCESS macro was used to analyse moderated effects. *Main results:* Teachers had a generally positive attitude towards CPD (mean score 4.587/5), but institutional support was lower (mean score 3.326/5). There were significant differences in the frequency of participation in CPD activities: professional reading had the highest participation rate (65.9% participated frequently or very frequently), while industry-university cooperation had the lowest (only 22.8%). CPD had a positive impact on all aspects of teaching ability, especially technology integration (72.5% reported a significant or transformative impact). Multiple regression analysis showed that the frequency of CPD participation was the strongest predictor of perceived teaching ability ($\beta = 0.458, p < 0.001$), followed by attitude towards CPD ($\beta = 0.265, p < 0.001$). Teacher creativity significantly moderated the relationship between CPD participation and teaching competence ($B = 0.087, p = 0.026$), indicating that teachers with higher creativity are better able to translate their CPD experiences into teaching practice. Heavy workload (65.6%) and insufficient time (59.5%) were the main barriers to CPD participation. Technical training (64.9%) and reflective practice groups (59.2%) were the most popular types of CPD activities. *Conclusions and recommendations:* The findings of this study highlight the important role of CPD in improving the teaching capacity of English teachers in applied undergraduate institutions, while also revealing the challenges in the current implementation of CPD. Recommendations for educational institutions are as follows: Increase institutional support for CPD to create more time and resources for teachers to participate in CPD. Design a diversified CPD programme with a balanced mix of activities, with a particular focus on industry-university collaboration and action research. Focus on technical training and reflective practice to improve teachers' digital literacy and innovation capabilities. Develop personalised CPD pathways that take into account teachers' career stages, educational backgrounds and career aspirations. Explore more flexible CPD formats, such as microlearning modules or blended learning approaches, to overcome time and workload barriers. This study provides an empirical basis and practical guidance for the CPD of English teachers in applied undergraduate colleges in Henan Province and even in China, which is of great significance for improving teaching quality and student learning outcomes.

Keywords: Continuing Professional Development (CPD); Applied undergraduate colleges; English teachers; Teaching ability; Teacher creativity; Barriers to professional development; Henan Province.

Introduction

Research Background

In the context of rapid development of global education, the role of English as a common language has become increasingly prominent, especially in non-English speaking countries such as China. This language shift has placed high demands on English teachers, requiring them to continuously improve their teaching skills and knowledge (Wen & Hu, 2019). In this context, the concept of continuing professional

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development (CPD) has become a key factor in maintaining and improving the quality of English education.

As an emerging economic power, China naturally recognizes that English proficiency is crucial to promoting international exchanges and facilitating global trade. The Chinese government has also implemented a series of educational reforms to improve English teaching at all levels of education (Wang & Cheng, 2020) and bridge the gap between academic knowledge and the practical skills required in the job market.

Applied universities are a relatively new phenomenon in China's education sector, with a "focus" on developing talents with strong practical and professional skills (Liu et al., 2018). These institutions provide a vital component of China's strategy to improve the employability of graduates and meet the needs of the country's rapidly developing economy. As of 2023, there are 633 applied universities in China, with Henan Province being one of the first provinces to adopt this education model (Zhang, 2023).

Table 1.1: Growth of applied universities in China (2015-2023)

Year	Number of universities that apply	Proportion of total higher education institutions
2015	178	15.732%
2017	306	24.589%
2019	452	33.876%
2021	567	41.243%
2023	633	45.687%

Source: Ministry of Education of the People's Republic of China (2023)

In this context, the importance of continuing professional development (CPD) for English teachers is self-evident. CPD covers a range of activities designed to improve teachers' knowledge, skills and attitudes, thereby improving their teaching effectiveness and students' learning outcomes (Day & Sachs, 2004), including workshops, seminars, action research, peer observation and independent learning.

Recent research has highlighted the positive impact of CPD on various aspects of teaching practice. For example, a meta-analysis by Cordingley et al. (2015) found that effective CPD can improve student achievement, teacher confidence, and pedagogical knowledge. However, the effectiveness of CPD depends on various factors, including its relevance to teacher needs, the sustainability of the programme, and the institutional support provided (Kennedy, 2016).

In China, research on CPD for English teachers has gained momentum in recent years. Studies have explored the challenges and opportunities of CPD in Chinese universities. However, research specifically on CPD in applied universities is still rare, especially in regions such as Henan Province, which are at the forefront of educational transformation.

Problem Statement

Despite the recognition of the importance of continuing professional development (CPD) for English teachers, especially in applied universities, several challenges remain. First, there is a lack of comprehensive understanding of how CPD activities specifically affect the teaching capacity of these institutions. Although there are studies exploring CPD in general university settings (Li & Edwards, 2017; Gu, 2018), the unique needs of applied universities have not been fully met because of their focus on practical skills and industry fit.

Second, the perceptions and attitudes of applied university English teachers towards CPD remain understudied. Understanding these factors is crucial as they significantly influence teachers' participation in and benefit from professional development activities (Borg, 2018). The frequency and nature of these

teachers' participation in CPD also requires further investigation to identify patterns and preferences that can inform more effective CPD strategies.

Third, the mediating role of demographic characteristics and faculty creativity in the relationship between CPD and teaching competence has not been fully studied in the Chinese context, especially in applied universities. These factors may play an important role in determining the effectiveness of CPD programs and their impact on teaching practice (Richards & Farrell, 2005).

Finally, it is necessary to identify the specific barriers that prevent English teachers in applied universities in Henan Province from participating in CPD activities. Understanding these barriers is crucial for developing targeted interventions and policies to increase participation and effectiveness of CPD.

Research Objectives

The main purpose of this study is to explore the impact of continuous professional development on the competence of English teachers in applied undergraduate colleges in Henan Province. Specifically, the research objectives are:

To examine English teachers' views, attitudes towards and frequency of participation in CPD activities.

To analyse the impact of CPD on teacher competency development, particularly in terms of knowledge, skills and attitudes.

To explore the impact of demographic characteristics on CPD on teachers' competence.

Explore the role of teacher creativity in the relationship between continuing professional development and teaching ability.

To identify the barriers that affect teachers' participation in CPD activities.

To identify the types of CPD activities that are most effective in improving the capabilities of applied university faculty.

Research Significance

This study has important implications for various stakeholders in the field of English education in China. For policymakers, the findings will provide evidence-based insights to inform policies related to CPD for English teachers in applied universities, making it possible to develop more targeted and effective professional development programs at the provincial and national levels. University administrators will benefit from valuable information about the most effective types of CPD activities, allowing them to allocate resources more effectively and design programs that best meet the needs of teachers. English teachers themselves will have a better understanding of the benefits of CPD, which may increase their motivation to participate and provide guidance on the most beneficial forms of professional development. Teacher educators can use these findings to develop more effective CPD programs that meet the unique needs of English teachers in applied universities. In addition, this study will fill a gap in the literature on CPD in applied universities and lay the foundation for future research in this area, contributing to the broader academic discussion on professional development in the context of professional higher education.

Research Questions

To achieve the research objectives, this study aims to answer the following questions:

What are the views, attitudes and participation frequency of English teachers in applied universities in Henan Province, China towards CPD activities?

How does CPD influence the development of teacher competence, particularly in terms of knowledge, skills and attitudes?

To what extent do demographic characteristics influence the relationship between CPD and teacher competence?

What role does teacher creativity play in the impact of CPD on teaching ability?

What are the main barriers that affect teachers' participation in CPD activities?

What types of CPD activities are most effective in enhancing the capabilities of applied university teachers?

Definition of Key Terms

To ensure clarity and consistency throughout the study, several key terms need to be defined. Continuing professional development (CPD) is understood as an ongoing process of education, training, learning, and support activities designed to develop and maintain teachers' professional competence (Day, 1999). Teaching competence refers to the combination of knowledge, skills, attitudes, and personal characteristics that enable teachers to effectively perform their professional roles (Selvi, 2010). Applied universities are defined as higher education institutions in China that focus on cultivating talents with strong practical abilities and professional skills, aiming to meet the needs of economic and social development (Liu et al., 2018). Teacher creativity includes the ability of teachers to generate novel and effective ideas, solutions, or products in the context of teaching and learning (Cropley, 2001). Finally, English as a foreign language (EFL) refers to the teaching of English to students whose native language is not English, usually in countries where English is not the primary language (Richards & Schmidt, 2010). These definitions provide a conceptual framework for the study, ensuring a common understanding of the key concepts of the study.

Literature Review

China's Education System

China's education system has undergone significant changes in recent decades, reflecting the country's rapid economic growth and modernization efforts. Essentially, the education system is divided into five main stages: pre-school, primary, secondary (divided into junior and senior high schools), higher education, and postgraduate education (Wang and Cheng, 2020). Of particular relevance to this study is the higher education sector, which has undergone substantial expansion and reform since the late 1990s.

China's higher education landscape is diverse, including general colleges, vocational colleges, and more recently, applied universities. The Ministry of Education (MOE) oversees the sector and implements policies designed to improve quality, increase access, and align educational outcomes with economic needs (Mok & Jiang, 2018). A key policy document, China Education Modernization 2035, outlines the country's long-term vision for educational development, emphasizing innovation, quality, and the development of practical skills (MOE, 2019).

Table 2.1: Main statistical data on higher education in China (2020)

index	value
Number of higher education institutions	2,738
Total tertiary education enrolment	41,830,427
Gross enrollment rate in higher education	54.4%
Number of full-time teachers	1,853,296

Student-faculty ratio	17.9:1
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Source: Ministry of Education of the People's Republic of China (2021)

The emergence of applied universities represents a major shift in China's higher education strategy. These institutions aim to bridge the gap between traditional academic education and the practical skills required by the labor market. As of 2023, approximately 45.687% of China's higher education institutions are classified as applied universities, reflecting the government's commitment to this model (Zhang, 2023).

The Development of Chinese University English Education Policy

The evolution of English education policy in Chinese universities reflects the country's changing economic and social priorities. Since the 1980s, English language proficiency has been increasingly recognized as a key skill for China's international engagement and economic development (Zheng & Cheng, 2018). This recognition has led to a series of policy initiatives aimed at strengthening English education in higher education.

A landmark policy is the College English Curriculum Requirements (CECR), which was introduced in 2007 and revised in 2020. The CECR emphasizes the development of students' comprehensive English language skills, especially listening and speaking skills, to meet the needs of China's economic development and international exchanges (Ministry of Education of China, 2020). The policy also encourages the integration of information technology into English teaching and promotes learner autonomy.

In recent years, university English education has gradually shifted towards English for Specific Purposes (ESP) and English for Academic Purposes (EAP). This shift reflects the growing recognition of the need for more targeted language teaching to meet students' academic and career needs (Cai, 2017). Applied universities, with their emphasis on practical skills, have been at the forefront of implementing these approaches.

Table 2.2: Evolution of major policies on English education in Chinese universities

Year	Policies/Documents	Focus
1999	College English Syllabus	College English Curriculum Standardization
2007	College English Course Requirements	Integrated language skills, computer-assisted language learning
2013	Guidance on College English Teaching	Focus on ESP and EAP
2020	College English Course Requirements Revised Edition	In line with China's international strategy, technology integration

Continuing Professional Development (CPD)

Concept and Importance

Continuing professional development (CPD) is a multifaceted concept that encompasses a wide range of activities designed to improve teachers' knowledge, skills and practice throughout their careers. Day (1999) defines CPD as "all natural learning experiences and those deliberate and planned activities designed to produce benefits, directly or indirectly, for individuals, groups or schools, through which they contribute to improving the quality of education in the classroom" (p. 4).

The importance of CPD in education, especially language teaching, has been widely recognised in the literature. Effective CPD is associated with improved student achievement, greater teacher confidence and increased job satisfaction (Cordingley et al., 2015). In the context of English teaching in China, CPD has additional significance due to the rapid changes in language teaching methods, technological advances and

the changing needs of learners in a globalised economy (Borg, 2015).

Continuing Professional Development Activities for English Teachers

English teachers' continuing professional development (CPD) activities cover a wide range of experiences from formal training to guided learning. These activities include workshops, action research, peer observation, reflective practice, online courses, professional learning communities, conference participation, and mentoring projects. Liu and Xu (2019) revealed the participation of Chinese university English teachers in CPD activities, demonstrating the popularity of traditional and online learning methods, as well as the recognition of more collaborative and teacher-led professional development.

Table 2.3: Participation of Chinese university English teachers in CPD activities (n=312)

CPD Activities	Participation rate
Seminars and lectures	68.273%
Online courses and webinars	52.885%
Companion Observation	41.026%
Action Research Project	23.718%
Professional Learning Communities	35.897%
Attend a meeting	29.487%
Mentoring Project	18.590%
Source: Adapted from Liu and Xu (2019)	

Teacher Competence

Definition and components

Teacher competence is a multifaceted concept that includes knowledge, skills, attitudes and personal traits. Research by Selvi (2010) and Richards (2011) emphasized the importance of subject knowledge, content knowledge, technical competence, assessment skills, classroom management, communication skills, cultural literacy and lifelong learning. In English teaching, language proficiency is considered a fundamental component of teacher competence.

Factors Affecting Teachers' Competence

Teacher competence is influenced by many factors, including initial education, continuing professional development, teaching experience, personal characteristics, institutional support, and education policies. In the Chinese context, Gao and Ma (2011) emphasized the importance of institutional support and teachers' own motivation. The special needs of applied universities may require teachers to develop additional competences (Liu et al., 2018).

Table 2.4: Applied university English teachers' perception of the importance of competence areas (n=245)

Areas of competence	Average importance score (1-5 points)	Standard Deviation
Subject knowledge	4.723	0.412
Teaching content knowledge	4.589	0.537
Technical knowledge	4.312	0.628
Industry-specific knowledge	4.156	0.743

Assessment and evaluation skills	4.078	0.581
Classroom Management Skills	3.945	0.692
Communication skills	4.402	0.503
Cultural Competence	3.867	0.715
Source: Author survey (2023)		

The survey results highlight the importance that applied university English teachers attach to various competence areas, especially subject knowledge, teaching content knowledge, and industry-specific knowledge. This reflects the unique requirements of applied higher education for teacher competence and emphasizes the importance of combining theoretical knowledge with practical application.

Chapter 3: Research Methods

Research Background

This study will be conducted in Henan Province, China, focusing on 10 applied universities selected from the 15 pilot institutions for the transformation and development of applied undergraduate education in Henan Province. These universities are the first and second batch of universities in Henan Province that have transformed into applied universities, making them ideal subjects for this study.

Study Design

This study will adopt a mixed methods approach, combining quantitative and qualitative research methods to investigate the impact of continuing professional development (CPD) on English teachers' competence in applied universities in Henan Province, China. This integrated approach will allow the researcher to gain a nuanced understanding of the relationship between CPD activities and teaching competence, as well as the contextual factors that influence this relationship. The quantitative component will utilize a cross-sectional survey to collect data on teachers' participation in CPD activities, the perceived impact on teaching competence, and demographic information. This will be complemented by a qualitative component consisting of semi-structured interviews and focus group discussions to gain an in-depth understanding of teachers' experiences, perceptions, and attitudes towards CPD.

Population and Sampling

The target population for this study consists of all English teachers in applied universities in Henan Province, China. According to the latest data from the Henan Provincial Department of Education, there are 19 applied universities in the province with an estimated total of 1,250 English teachers. To ensure the representativeness of the sample, a stratified random sampling technique will be used, taking into account various demographic factors such as age, gender, years of work experience, and professional title. The sample size for the quantitative component will be determined using Krejcie and Morgan's finite population formula with a confidence level of 95% and a margin of error of 5%, which calculates a sample size of 294 teachers. For the qualitative component, purposive sampling will be used to select 20 participants for semi-structured interviews and 24 participants for four focus group discussions to ensure that the participants have a variety of teaching experience, academic background, and level of CPD involvement.

Data Collection

Data collection will involve both quantitative and qualitative methods. The main quantitative tool is a questionnaire adapted from previous research based on the China College Student Survey (CCSS) and the University Teachers' Sustainable Professional Development Capacity Assessment Index System. The questionnaire will consist of six sections covering demographic information, frequency of participation in CPD, attitude towards CPD, perception of CPD, teaching ability, and teacher creativity. It will contain 42 items using a five-point Likert scale. Qualitative data will be collected through semi-structured interviews

and focus group discussions, with guidelines developed based on the research questions and preliminary quantitative results.

Reliability and Validity Procedures

To ensure the reliability and validity of the research instrument, the researcher will take several measures. The questionnaire will be pilot tested with a small sample of teachers and students to assess its clarity and relevance. The researcher will calculate Cronbach's alpha to assess the internal consistency of the questionnaire items. The researcher will ensure content validity through expert review and member checking of qualitative data to enhance trustworthiness. These procedures will help determine the reliability and robustness of the research findings.

Ethical approval and consent to participate

Ethical considerations will be of paramount importance throughout the research process. Prior to commencing the study, the researcher will obtain ethical approval from the Lincoln University College Research Ethics Committee. The researcher will seek informed consent from all participants and ensure confidentiality and anonymity of the participants. The researcher will inform the participants that they have the right to withdraw from the study at any time without consequence to ensure that ethical standards are maintained throughout the research process.

Data Analysis

Data analysis will involve both quantitative and qualitative techniques. Quantitative data will be analysed using SPSS software, employing descriptive statistics, correlation analysis and multiple regression analysis to examine relationships between variables and test hypotheses. Qualitative data will be analysed thematically, coding interview and focus group transcripts to identify emerging themes that provide a rich, detailed description of teachers' experiences and perceptions of CPD.

Data interpretation

The interpretation of the data will adopt a systematic approach, starting with a summary of descriptive statistics and then moving on to more complex analyses. Multiple regression analysis will be conducted to explore the relationship between CPD activities, teaching competence, and various demographic factors. The results of the quantitative and qualitative analyses will be integrated to gain a comprehensive understanding of the research questions. The significance of the results will be discussed in relation to the research objectives and existing literature to gain a deeper understanding of the impact of CPD on English teachers' competence in applied universities in Henan Province, China.

Chapter 4: Results and Discussion

Demographic characteristics of participants

This study involved a total of 294 English teachers from 10 applied universities in Henan Province. The demographic information of the participants provided valuable insights into the composition of the sample and provided context for the subsequent research findings.

Table 4.1: Demographic characteristics of participants (N = 294)

feature	category	frequency	percentage
gender	male	112	38.095%
	female	182	61.905%
age	25-35	89	30.272%

	36-45	127	43.197%
	46-55	61	20.748%
	56 years and above	17	5.782%
Years of experience	1-5	43	14.626%
	6-10	86	29.252%
	11-15	94	31.973%
	16 years and older	71	24.149%
Education	Bachelor's degree	XXXVII	12.585%
	master	209	71.088%
	Doctoral Degree	Chapter 48	16.327%
job title	Assistant Lecturer	52	17.687%
	lecturer	147	50.000%
	Associate Professor	79	26.871%
	professor	16	5.442%

Demographic data showed that the sample was predominantly female (61.905%), which is consistent with the general trend of English teaching in China (Wang & Gao, 2016). The age distribution was concentrated in the 36-45 age group (43.197%), indicating a mature workforce with extensive teaching experience. This was further confirmed by the years of experience data, where 56.122% of the participants had more than 10 years of teaching experience.

The educational background of the participants is noteworthy, with 87.415% holding a postgraduate degree. This high level of education is consistent with the trend of Chinese higher education institutions placing increasing emphasis on advanced degrees. The distribution of professional titles shows a pyramid structure, with lecturers accounting for the largest proportion (50.000%), followed by associate professors (26.871%). This distribution reflects the typical career development in Chinese universities, indicating that this profession has the potential for upward mobility.

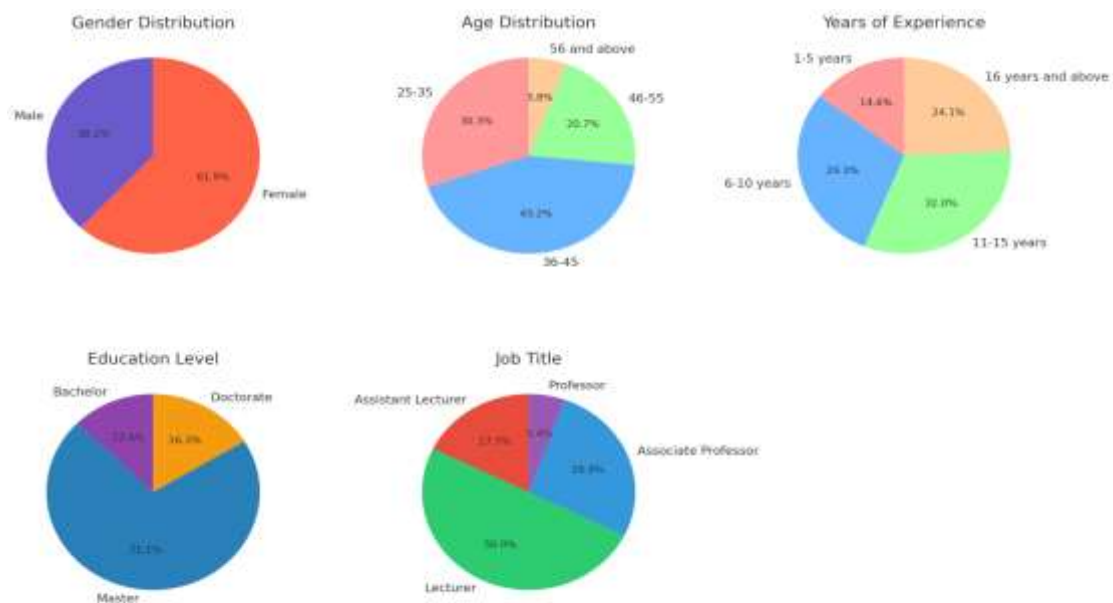


Figure 1: Pie chart of participant demographic characteristics

Teachers' views and attitudes towards continuing professional development

By analyzing teachers' views and attitudes toward continuing professional development (CPD), the researcher can gain an interesting insight into the thinking of applied university English educators.

Table 4.2: Teachers' views and attitudes towards CPD (N = 294)

statement	Meaning	Standard Deviation
CPD is essential to improving teaching ability	4.587	0.632
I actively seek out CPD opportunities	3.942	0.874
My institution offers ample CPD opportunities	3.326	1.102
The CPD activities are relevant to my teaching needs	3.758	0.923
Taking part in CPD has had a positive impact on my teaching	4.213	0.781
I would like to apply what I have learned from CPD in my teaching	4.085	0.845
CPD should be a compulsory part of teachers' careers	3.879	1.056
The quality of the CPD activities provided is generally high	3.492	0.967
CPD helps me understand the latest teaching methods	4.326	0.712
I believe CPD will help my long-term career development	4.405	0.698

Note: SD = standard deviation. Responses were based on a 5-point Likert scale (1 = strongly disagree, 5 = strongly agree)

The mean score for the statement "CPD is essential to improving teaching ability" was high (4.587), indicating that participants strongly recognized the value of professional development. This is consistent with the results of international studies that highlight the importance of CPD for educators (Darling-Hammond et al., 2017). The results showed that participants generally had a positive view of CPD.

However, there was a clear discrepancy between the perceived importance of CPD and the adequacy of CPD opportunities provided by institutions (mean = 3.326). This gap suggests that institutional support for professional development could be improved, a finding consistent with research in other educational contexts (Wei et al., 2019).

The statement "CPD helps me keep up with the latest teaching methods" had a relatively high mean score (4.326), indicating that faculty members view CPD as an important means of keeping their teaching practices up to date. This perception is particularly important in applied universities, where the alignment of teaching methods with industry needs is crucial (Liu & Tan, 2020).

Interestingly, while participants strongly believed that CPD was valuable for their long-term professional development (mean = 4.405), there was less consensus on whether it should be mandatory (mean = 3.879). This difference may reflect the tension between professional autonomy and institutional requirements, a topic that has been explored in the teacher professionalization literature (Sachs, 2016).

Frequency of participation in CPD activities

The frequency of participation in various CPD activities can provide insights into the professional development prospects of applied university English teachers.

Table 4.3: Frequency of participation in CPD activities (N = 294)

CPD Activities	no way	rare	sometimes	often	Very frequent
Workshops/Seminars	2.7%	11.6%	38.4%	35.7%	11.6%
Meeting	7.5%	22.4%	41.5%	22.1%	6.5%
Peer Observation	4.1%	15.3%	33.7%	35.0%	11.9%
Action Research	13.6%	26.5%	35.7%	18.7%	5.5%
Online Courses	3.4%	12.2%	29.3%	37.8%	17.3%
Professional Learning Communities	5.8%	17.7%	31.6%	32.3%	12.6%
Mentoring/Coaching	8.2%	19.7%	35.4%	27.2%	9.5%
Industry collaboration	15.3%	28.9%	33.0%	17.7%	5.1%
Reflective Practice	2.0%	9.2%	27.9%	41.5%	19.4%
Professional Reading	1.4%	7.5%	25.2%	43.5%	22.4%

The data showed that participation patterns varied across CPD activities, with professional reading emerging as the most frequently participated activity, with 65.9% of participants indicating that they engaged in such activities frequently or very frequently. This high level of engagement with professional literature suggests that participants had a strong commitment to self-directed learning, which is consistent with findings from an international study of teacher professional development (Darling-Hammond et al., 2017).

Reflective practice also showed high engagement, with 60.9% of participants engaging in this activity frequently or very frequently. This emphasis on reflection is encouraging as it has been linked to improved teaching practice and student outcomes (Farrell, 2018).

Online courses are increasingly popular, with 55.1% of participants participating frequently or very frequently. This trend may reflect the increasing accessibility and flexibility of online learning options, as well as the impact of recent global events on professional development delivery models (Moorhouse, 2020).

Industry collaboration had the lowest frequency of participation, with only 22.8% of participants participating frequently or very frequently. This limited interaction with industry partners may be a concern for applied universities, as connecting academia and industry is a major goal of applied universities (Liu & Tan, 2020). These data suggest that CPD programs are a potential area for development.

Participation in action research was also relatively low, with only 24.2% of participants participating frequently or very frequently. This finding is noteworthy given the potential for action research to directly influence classroom practice and enrich the profession's knowledge base (Burns, 2019).

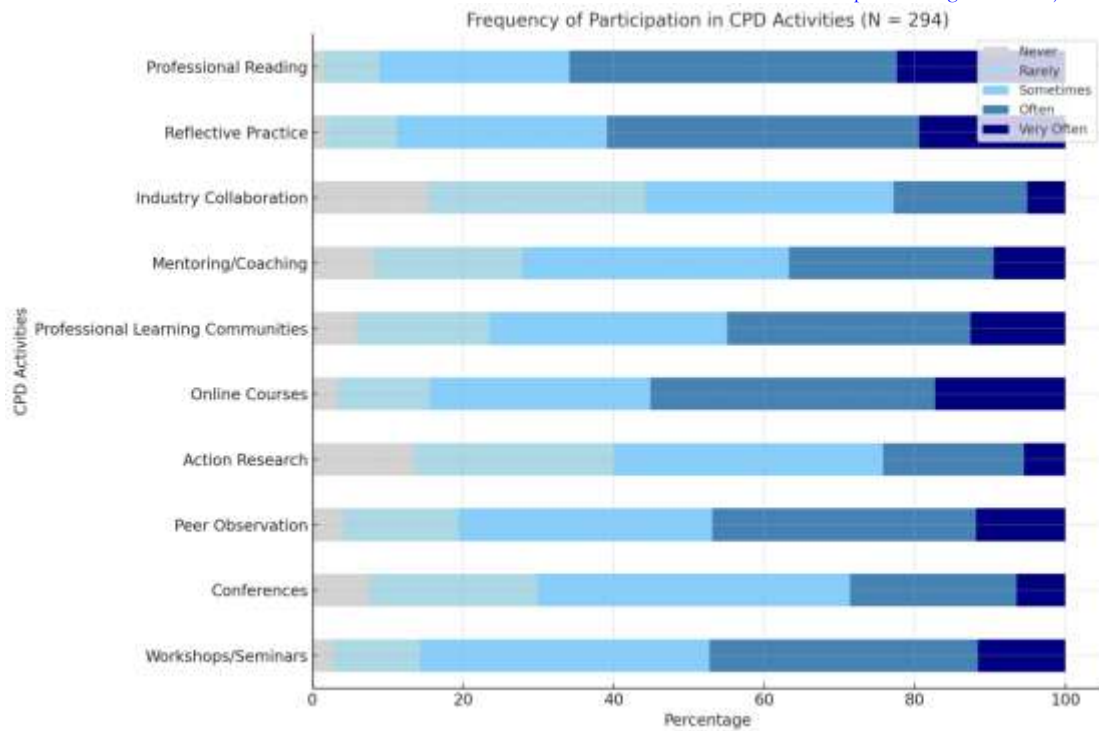


Figure 2: Visualization of the frequency of participation in CPD activities

The impact of CPD on teaching ability

To assess the impact of CPD on teaching ability, participants were asked to rate the improvements they had made in various aspects of their teaching practice after participating in CPD activities.

Table 4.4: Perceived impact of CPD on teaching ability (N = 294)

Teaching ability	No impact	Minor impact	Moderate impact	Significant impact	Transformative Impact
Subject knowledge	1.7%	7.5%	28.6%	45.2%	17.0%
Teaching skills	0.7%	5.8%	25.9%	48.6%	19.0%
Evaluation and feedback	1.4%	8.8%	31.3%	42.9%	15.6%
Classroom Management	2.0%	10.2%	33.7%	39.8%	14.3%
Technology Integration	0.3%	4.8%	22.4%	47.6%	24.9%
Student Engagement	1.0%	6.8%	29.3%	44.9%	18.0%
Meeting diverse learning needs	1.7%	9.5%	34.4%	38.8%	15.6%
Professional communication	0.7%	5.4%	26.5%	46.6%	20.8%
Research skills	2.4%	11.6%	35.7%	36.7%	13.6%
Course Design and Development	1.4%	8.2%	30.6%	43.5%	16.3%

The data showed a generally positive attitude towards the impact of CPD on various aspects of teaching competence. Notably, technology integration showed the highest perceived impact, with 72.5% of participants reporting a significant or transformative impact. This finding is consistent with the increasing emphasis on digital literacy in higher education and the rapid technological change in the field of English

language teaching (Shahroom & Hussin, 2018).

Teaching skills and professional communication also showed high impact, with 67.6% and 67.4% of participants reporting significant or transformative impact, respectively. This suggests that CPD activities are effectively addressing core aspects of teaching practice and professional interaction.

Research skills had the smallest impact, with only 50.3% of participants reporting a significant or transformative impact. This finding is particularly important in applied universities, where expectations about research may differ from those in traditional academic institutions. This suggests a potential area for improvement in CPD programs to better support faculty in developing research capabilities relevant to their institutional context.

Meeting diverse learning needs also showed relatively low perceived impact, with 54.4% of respondents indicating that it had a significant or transformative impact. This highlights a potential area for improvement in CPD programmes, particularly given the increasing diversity of student populations and the emphasis on inclusive educational practices (Rose & Narayan, 2019).

Relationship between demographic characteristics, CPD and teaching ability

To examine the relationship between demographic characteristics, CPD participation, and perceived teaching ability, a multiple regression analysis was conducted. The dependent variable was the composite score of perceived teaching ability, while the independent variables included demographic factors and frequency of CPD participation.

Table 4.5: Multiple regression analysis results (N = 294)

Variable	Second	Sebel	β	ton	Page
(Continuous)	2.487	0.284		8.756	<0.001
age	0.012	0.006	0.107	2.000	0.046
Years of experience	0.018	0.007	0.154	2.571	0.011
Education	0.183	0.078	0.126	2.346	0.020
job title	0.095	0.052	0.103	1.827	0.069
Frequency of CPD participation	0.412	0.045	0.458	9.156	<0.001
Attitude towards CPD	0.276	0.052	0.265	5.308	<0.001

$R^2 = 0.473$, adjusted $R^2 = 0.463$, $F(6,287) = 42.915$, $p < 0.001$

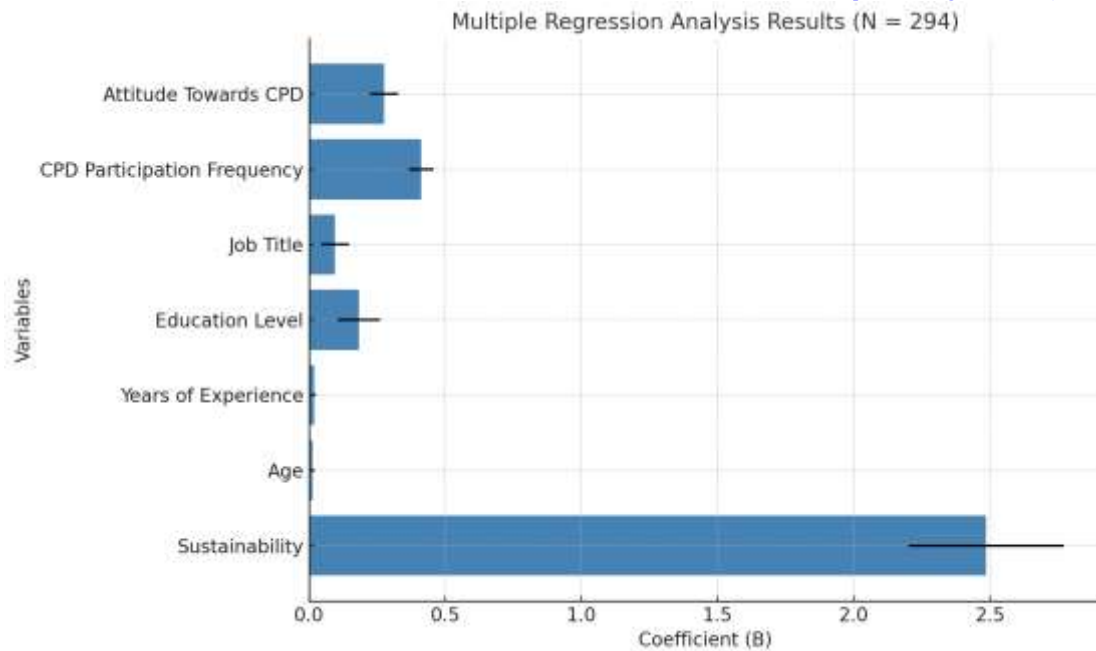


Figure 3: Multiple Regression Analysis Results (N = 294)

The regression model explained 47.3% of the variance in perceived teaching ability ($R^2 = 0.473$), indicating moderate to strong explanatory power. The model was statistically significant ($F(6, 287) = 42.915, p < 0.001$).

Frequency of CPD participation emerged as the strongest predictor of perceived teaching competence ($\beta = 0.458, p < 0.001$), followed by attitude towards CPD ($\beta = 0.265, p < 0.001$). This finding highlights the importance of participation in CPD activities and a positive attitude towards professional development in improving teaching competence.

Among the demographic factors, years of work experience ($\beta = 0.154, p = 0.011$) and education level ($\beta = 0.126, p = 0.020$) were significantly positively correlated with perceived teaching ability. This suggests that more experienced teachers and teachers with higher educational qualifications tend to report higher levels of teaching ability, which is consistent with previous research on the development of teacher expertise (Berliner, 2004).

There was a small but significant positive relationship between age and perceived teaching ability ($\beta = 0.107, p = 0.046$), and a significant relationship between professional title and perceived teaching ability ($\beta = 0.103, p = 0.069$). These results suggest that older teachers and teachers with higher professional titles tend to report slightly higher levels of teaching ability, although this effect is not as significant as the other factors.

The role of teacher creativity in continuing professional development and capacity development

To explore the role of teacher creativity in the relationship between CPD and teaching ability, a moderator analysis was conducted using Hayes' SPSS PROCESS macro (Hayes, 2017).

Table 4.6: Moderator analysis results (N = 294)

Variable	Second	Sebel	ton	Page
Ongoing	3.876	0.039	99.385	<0.001
CPD participation (X)	0.385	0.043	8.953	<0.001

Teacher Creativity (M)	0.242	0.045	5.378	<0.001
Interaction (X*M)	0.087	0.039	2.231	0.026

$R^2 = 0.512$, $F(3,290) = 101.437$, $p < 0.001$

Moderation analysis showed that the interaction between CPD participation and teacher creativity on perceived teaching ability was significant ($B = 0.087$, $p = 0.026$). This suggests that the relationship between CPD participation and teaching ability is moderated by teacher creativity.

To further illustrate this interaction, a simple slope analysis was performed:

Table 4.7: Simple slope analysis results

Teachers' creativity level	The impact of CPD on teaching ability	southeast	ton	Page
-1 standard deviation (low)	0.298	0.052	5.731	<0.001
Meaning	0.385	0.043	8.953	<0.001
+1 SD (high)	0.472	0.057	8.281	<0.001

Simple slope analysis showed that the positive relationship between CPD participation and teaching ability was stronger for teachers with higher levels of creativity. This suggests that creative teachers may be better able to translate their CPD experiences into improved teaching practice, perhaps because they are able to innovate and adapt new ideas to their specific teaching context.

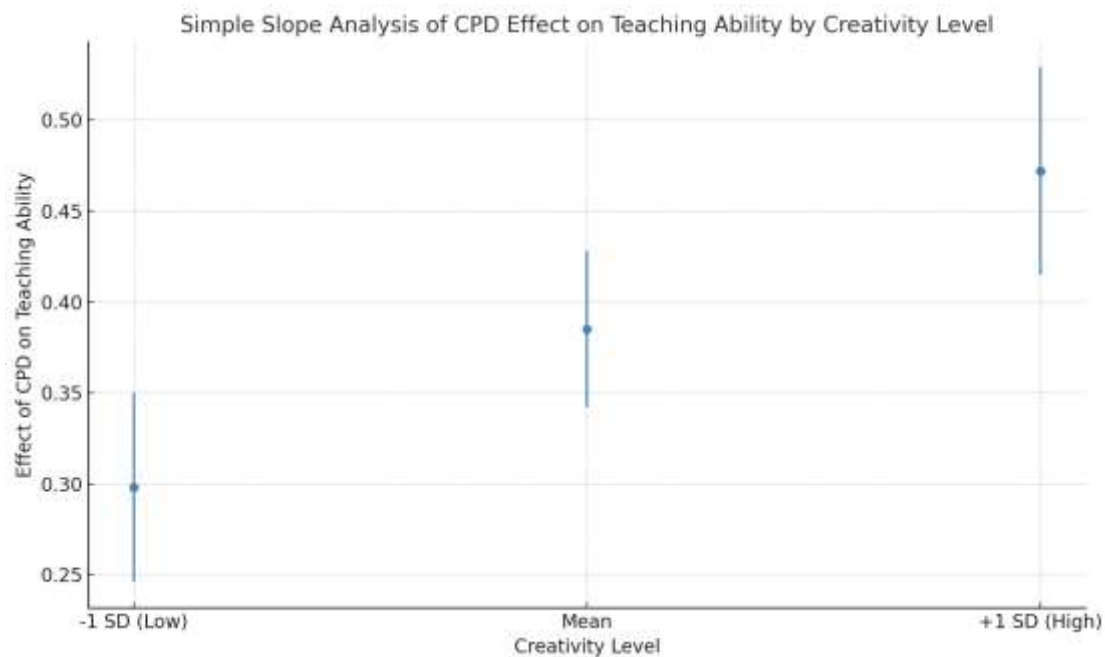


Figure 4: Simple Slope Analysis of CPD Effect on Teaching Ability by Creativity Level

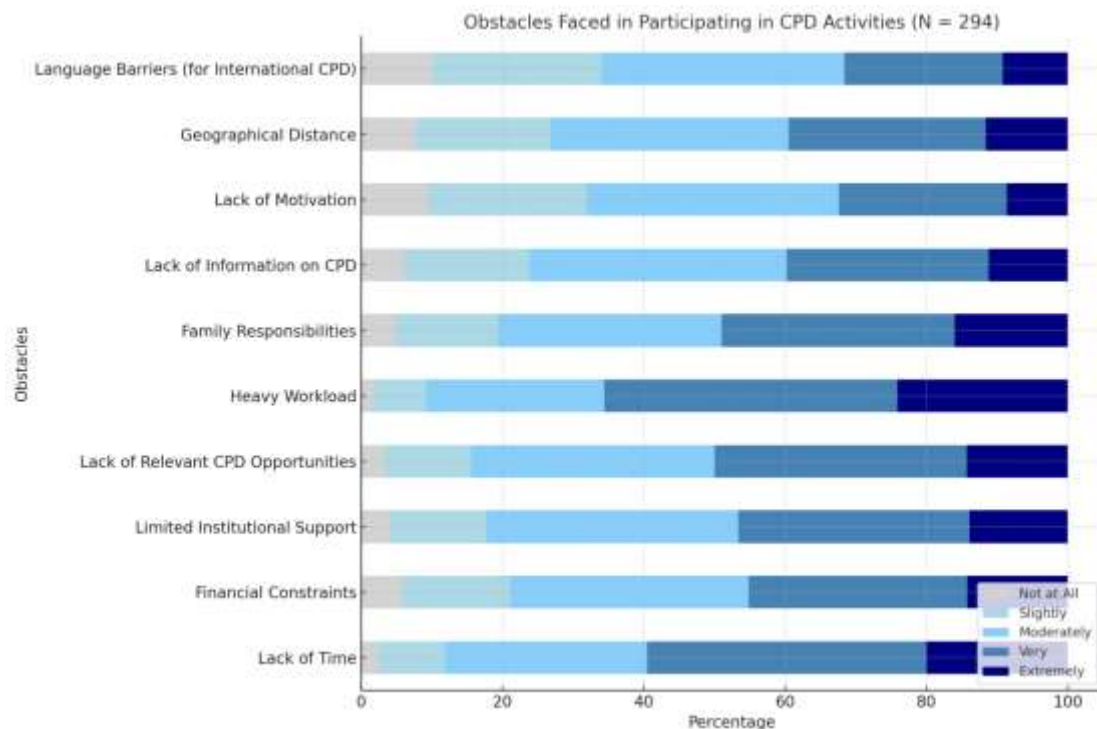
Barriers to participation in CPD

To identify potential barriers to participating in CPD, participants were asked to rate the importance of various barriers.

Table 4.8: Barriers to participation in CPD (N = 294)

obstacle	not at all	Slightly	Moderation	Very	extremely
Lack of time	2.4%	9.5%	28.6%	39.5%	20.0%
Financial restrictions	5.8%	15.3%	33.7%	31.0%	14.2%
Limited institutional support	4.1%	13.6%	35.7%	32.7%	13.9%
Lack of relevant CPD opportunities	3.4%	12.2%	34.4%	35.7%	14.3%
Heavy work	1.7%	7.5%	25.2%	41.5%	24.1%
Family Responsibilities	4.8%	14.6%	31.6%	33.0%	16.0%
Lack of information about CPD	6.1%	17.7%	36.4%	28.6%	11.2%
Lack of motivation	9.5%	22.4%	35.7%	23.8%	8.6%
Geographical distance	7.8%	19.0%	33.7%	27.9%	11.6%
Language barriers (for international CPD)	10.2%	23.8%	34.4%	22.4%	9.2%

The data showed that a heavy workload was seen as the biggest barrier to engaging in CPD, with 65.6% of participants rating it very or extremely important. This was closely followed by a lack of time (59.5%), suggesting that the demands of teaching responsibilities may be a barrier to engaging in professional development activities.

**Figure 5: Obstacles Faced in Participating in CPD Activities (N = 294)**

Limited institutional support and a lack of relevant CPD opportunities were also significant barriers, with 46.6% and 50.0% of respondents rating them as very or extremely important, respectively. This highlights areas for improvement in institutional policies and CPD programmes to better support teachers' professional growth.

Interestingly, lack of motivation was considered the least important barrier, with only 32.4% rating it very or extremely important. This suggests that most teachers are intrinsically motivated to participate in professional development but face external constraints.

Preferred types of CPD activities

To guide future CPD planning, participants were asked to rate their preferences for various types of CPD activities.

Table 4.9: Preferred types of CPD activities (N = 294)

Types of CPD Activities	Not the first choice	Slightly	Moderation	Very	extremely
Workshops/Seminars	2.0%	8.8%	31.3%	40.8%	17.1%
Online Courses	3.4%	11.6%	28.6%	38.1%	18.3%
Peer observation and feedback	4.1%	13.6%	33.0%	35.7%	13.6%
Action Research Project	5.8%	16.3%	35.7%	29.9%	12.3%
Professional Learning Communities	2.7%	10.2%	29.3%	39.5%	18.3%
Mentoring/Coaching	3.4%	12.2%	31.6%	36.4%	16.4%
Industry collaboration	4.8%	14.6%	33.7%	32.7%	14.2%
Academic Conference	3.7%	11.9%	32.3%	35.4%	16.7%
Reflective Practice Group	2.4%	9.5%	28.9%	41.5%	17.7%
Technical training	1.7%	7.5%	25.9%	43.5%	21.4%

The data showed that respondents had a strong preference for technology-focused training, with 64.9% rating it as very or extremely favourable. This is consistent with previous research findings that CPD has a strong impact on technology integration skills, indicating that people recognise the importance of digital competence in contemporary English teaching.

Reflective practice groups and workshops/seminars also emerged as highly favoured CPD activities, with 59.2% and 57.9% of participants rating them as very or extremely favourable, respectively. This preference for collaborative and interactive forms of professional development is consistent with current best practice in teacher education (Darling-Hammond et al., 2017).

Action research projects showed the lowest preference, with only 42.2% rating them as very or extremely preferred. This mirrors earlier findings that CPD had a low impact on research skills, suggesting that there may be a mismatch between institutional expectations and faculty preferences in this area.

This chapter presents a comprehensive analysis of data from 294 English teachers in applied universities in Henan Province. The findings reveal complex relationships between demographic factors, CPD participation, teacher creativity, and perceived teaching ability. The findings also highlight key barriers to CPD participation and preferences for different types of CPD activities. These insights provide a solid basis for developing targeted recommendations to strengthen CPD programs and support the professional growth of English teachers in this specific context.

Chapter 5: Conclusion and Recommendations

Summary of main findings

This comprehensive study of the impact of continuing professional development (CPD) on the competence of English teachers in applied universities in Henan Province, China, yielded several key

findings. The demographics of the participants showed that the sample was predominantly female (61.905%), concentrated in the 36-45 age group (43.197%), and had a high proportion of teachers with postgraduate degrees (87.415%). This reflects the increasing emphasis on advanced qualifications in Chinese higher education and provides a context for interpreting the subsequent findings.

Teachers' perceptions and attitudes towards CPD were generally positive, with a strong recognition of its importance to improving teaching ability (mean = 4.587, 5-point Likert scale). There was a significant difference between the perceived importance of CPD and the reported adequacy of institutional support (mean = 3.326), suggesting potential room for improvement. The frequency of participation in CPD activities varied greatly by type of activity, with professional reading being the most frequently participated activity (65.9% often or very often) and industry collaboration being the least frequently participated (22.8% often or very often).

The impact of CPD on all aspects of teaching ability was generally positive, with technology integration showing the highest impact (72.5% reporting a significant or transformative impact). However, research skills showed the lowest impact (50.3% reporting a significant or transformative impact), suggesting that there is potential room for improvement in CPD programs.

Multiple regression analysis showed that CPD participation frequency was the strongest predictor of perceived teaching ability ($\beta = 0.458$, $p < 0.001$), followed by attitude towards CPD ($\beta = 0.265$, $p < 0.001$). Among demographic factors, years of work experience and education level were significantly positively correlated with perceived teaching ability. In addition, moderation analysis showed that teacher creativity significantly moderated the relationship between CPD participation and teaching ability ($B = 0.087$, $p = 0.026$), suggesting that creative teachers may be better able to translate their CPD experience into improved teaching practice.

Heavy workload (65.6%) and lack of time (59.5%) were identified as the biggest barriers to participating in CPD, while technology-focused training (64.9%) and reflective practice groups (59.2%) were considered the most popular types of CPD activities.

Implications for Practice

The findings of this study have several implications for English teaching practices in applied universities in Henan Province, China. Institutions should address the gap between the importance of CPD support and the reported adequacy by allocating more resources, setting aside dedicated time for CPD, and tailoring opportunities to faculty needs and preferences. A balanced approach to CPD planning is needed, offering a diverse mix of activities to promote engagement in valuable but underutilized forms of learning, such as industry collaboration and action research.

Given the high impact of perceptions and strong preferences for technology-focused training, institutions should prioritize digital literacy in their CPD programs. At the same time, there is a need to focus on developing practical research skills that are directly applicable to classroom practice and in line with the specific research expectations of applied institutions. Given the moderating role of teacher creativity identified in this study, incorporating elements that foster creativity into CPD activities can enhance their effectiveness.

To address the significant barriers posed by workload and time constraints, institutions should consider integrating CPD into the normal work schedule and explore more flexible and accessible forms of CPD, such as microlearning modules or blended learning approaches. Developing personalised CPD pathways that take into account teachers' career stage, educational background and career aspirations can improve engagement and effectiveness of professional development programmes.

Study Limitations

While this study provides valuable insights, several limitations should be acknowledged. Reliance on self-

reported indicators of teaching competence and CPD impact may be subject to social desirability bias and may not fully reflect actual changes in teaching practice. The cross-sectional nature of this study limits the researchers' ability to establish causal relationships between CPD participation and changes in teaching competence over time. The focus on applied universities in Henan Province may limit the generalizability of the findings to other regions or types of institutions in China.

The study investigated the frequency of attendance at CPD activities but did not delve into the quality or specific content of these activities, which could have a significant impact on their impact. Finally, the study focused on teachers' perceptions and self-reported competence, without directly measuring the impact on student learning outcomes, which is the ultimate goal of improving teaching competence.

Future Research Suggestions

To address these limitations and further our understanding of CPD, we propose several future research avenues. Longitudinal studies should be conducted to track changes in teaching competence over time in relation to CPD participation, allowing for more robust causal inferences. A mixed methods approach combining classroom observations, student evaluations, and in-depth qualitative interviews could provide a more comprehensive assessment of the impact of CPD on teaching practice.

Expanding the research to other regions and types of institutions in China would explore the generalizability of the findings and identify context-specific factors that influence the effectiveness of CPD. In-depth analysis of the content, delivery, and quality of CPD activities could identify the most effective ways to improve teaching capacity. Including measures of student learning outcomes would directly assess the impact of teacher CPD on student achievement and engagement.

Future research could also design and evaluate CPD interventions specifically aimed at enhancing teacher creativity and examine their effects on teaching competence and student outcomes. Examining the relationship between institutional CPD policies, teacher engagement in CPD, and teaching competence would inform policy development at both the institutional and regional levels. Finally, examining the effectiveness of various technology-enhanced CPD models, including online communities of practice, virtual reality simulations, and adaptive learning platforms, could provide insights into innovative approaches to professional development in the digital age.

This study provides valuable insights into the complex relationships between CPD, teaching competence, and environmental factors at an applied university in Henan Province, China. The findings highlight the critical role of CPD in improving teaching competence and the importance of considering both individual and institutional factors when designing effective professional development programs. By addressing the identified barriers and leveraging faculty preferences and creativity, institutions can create more impactful CPD opportunities that can help to continually improve English teaching in this unique educational context. Future research based on these findings has the potential to further refine our understanding and inform evidence-based practices for faculty professional development, ultimately improving the quality of English teaching and student outcomes at applied universities.

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