

# Investigation into Perspectives of Chinese Vocational College Instructors on Digital Teaching in Tertiary Education

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**Abstract:** In today's world, digital teaching is now integral to education, seamlessly incorporating information and communication technology (ICT) through online platforms and interactive tools. This approach enhances accessibility, collaboration, and personalized learning experiences, essential for cultivating digital literacy skills in students. This research delves into the perspectives of Chinese vocational college instructors regarding the incorporation of digital teaching within their classrooms. Furthermore, it scrutinizes how educators' academic backgrounds and years of teaching experience might shape their stances on digital teaching in vocational education. Employing a quantitative survey with a convenient sample of 60 instructors, this study aims to identify attitudes toward technology use among vocational college educators and explore potential variations based on teaching experience and educational qualifications. The findings emphasize the growing need to uncover the nuanced motivations and concerns that underlie instructors' attitudes toward technology.

**Keywords:** Digital Teaching, Perspectives, Vocational college instructors, Attitudes

## 1. Introduction

### 1.1 Background of the study

In the dynamic landscape of our modern society, Information and Communication Technology (ICT) has become an ever-present influence, permeating nearly every aspect of our daily lives. Educators are increasingly compelled to explore their perspectives on the seamless integration of technology within vocational college classrooms <sup>[1]</sup>, emphasizing the need for a deeper understanding of teachers' beliefs in this context.

The expertise in digital teaching has emerged as a focal point in academic discourse. The amalgamation of technical and pedagogical digital proficiency empowers educators not only to refine their instructional approaches but also to nurture their students' digital skills and uphold a continuous commitment to professional development. In evaluating their aptitude for digital teaching, a predominant number of university instructors seem to demonstrate an adequate level of technical digital skills, as indicated by Esteve-Mon et al. <sup>[2]</sup>. This observation underscores the notion that educators are equipped with the necessary technical foundations to navigate the realm of digital teaching effectively.

### 1.2 Research Objectives and Questions

The primary aim of this inquiry is to scrutinize the perspectives of vocational college instructors concerning the assimilation of digital learning in student instruction. The specific research objectives are delineated as follows:

- 1) To assess the attitudes of vocational college instructors towards the incorporation of technology

into the instructional process for students.

2) To investigate potential disparities in these attitudes based on the educational qualifications of vocational college instructors.

3) To explore potential divergences in these attitudes based on the teaching experience of vocational college instructors.

Consequently, the research questions are articulated as follows:

1) What perspectives do vocational college instructors hold regarding the digital teaching into student instruction?

2) Do variations exist in instructors' viewpoints on the utilization of digital teaching in teaching students, contingent upon their educational qualifications in the vocational college setting?

3) Are there distinctions in instructors' perspectives on the application of digital teaching students based on their years of teaching experience at the vocational college level?

### ***1.3 The importance of the research***

This research is underscored by its investigation into the perspectives of Chinese Vocational College Instructors on digital teaching within the realm of vocational education. It provides invaluable insights into the effective integration of digital teaching practices in vocational education, which plays a pivotal role in shaping students' future career paths. Moreover, by delving into teachers' attitudes and viewpoints regarding the integration of technology into classroom instruction, it offers insights that are beneficial to educators, school administrators, and educational authorities. This dual focus amplifies the study's significance, contributing not only to the specific context of vocational education but also to the broader educational discourse.

## **2. Literature Review**

### ***2.1 Definition of ICT***

Information and Communication Technology (ICT) has profoundly impacted various facets of our lives, both in professional and personal spheres, by enhancing the dissemination of knowledge and augmenting the flow of information and communication. ICT's continuous evolution has brought forth many challenges for individuals<sup>[3]</sup>. ICT has revolutionized operational procedures within enterprises, brought about fundamental changes in education, and reshaped the methods through which students acquire knowledge<sup>[4]</sup>

### ***2.2 E-learning***

In the contemporary era, there has been a notable transformation in university teaching methodologies, with nearly all higher education institutions incorporating e-learning platforms for course delivery and learning activities. Despite the pervasive integration of digital learning environments in higher education, a conundrum persists as these platforms grapple with formidable challenges, notably characterized by noteworthy dropout rates and suboptimal completion rates. This imperative analysis underscores the need for a nuanced understanding of the intricate interplay between technology, instructional design, and student engagement.<sup>[5]</sup>

### ***2.3 Tertiary Education in China***

The monitoring and evaluation of students' academic journey at the secondary level play a pivotal role in shaping their educational trajectory. Within the Chinese educational landscape, there exists a category of schools known as key-point institutions, characterized by the presence of high-quality teachers and advanced facilities. In the aftermath of the unprecedented expansion of higher education that commenced in 1999, there has been a notable shift in the spotlight of educational transitions.<sup>[6]</sup>

### ***2.4 The Impact of digital teaching in Tertiary Education***

The evaluation of the effectiveness of digital teaching has emerged as a prominent focus in academic

discourse. The primary objective is to discern the pivotal factors that contribute to the success of e-learning systems, with the aim of optimizing their overall efficacy<sup>[7]</sup>. Digital teaching within the tertiary education landscape has garnered considerable attention from both researchers and educators, driven by its potential to elevate pedagogical practices, foster student engagement, and equip learners for the demands of the digital era.

The attitudes of college teachers toward digital learning exhibit variations. A multitude of scholarly investigations have delved into various facets of this phenomenon, undertaking an in-depth exploration of factors that shape teachers' attitudes.<sup>[8]</sup>

### 3. Methodology

#### 3.1 Research Design

This study employs a robust methodology featuring a questionnaire survey distributed to a cohort of 60 teachers across three vocational colleges in Guangzhou, China. The selection of participants is conducted through a convenient sampling approach, ensuring a representative sample for rigorous quantitative analysis.

#### 3.2 Research Instrument

This research emphasizes on rigorous quantitative analysis ensures a comprehensive examination of teachers' attitudes toward integrating technology into their teaching practices. The questionnaire encompasses various sections, including background details, educational qualifications, and viewpoints on the utilization of technology within classrooms. The distribution of the questionnaire will be facilitated through the program "Questionnaire Star," and the subsequent data analysis will be executed using the Statistical Package for the Social Sciences (SPSS). This methodological framework ensures a meticulous and insightful exploration of the subject matter.

### 4. Findings

The meticulous collection of 60 questionnaires serves as a robust foundation for the ensuing comprehensive analysis and discussion. The results, thoughtfully organized in tabular format, provide a detailed insight into the perspectives of vocational college teachers on digital teaching when instructing college students. This nuanced examination aims to uncover potential variations in their beliefs and practices related to digital teaching, enriching our understanding of the multifaceted dynamics at play in vocational education. The data, subjected to rigorous analysis, addresses the specific research inquiries outlined in the study. In essence, this study stands as a testament to the commitment to unraveling the complexities of digital teaching, offering practical implications for educators, administrators, and policymakers in the field of vocational education. As the educational landscape continues to evolve, a nuanced understanding of the beliefs and practices of vocational college teachers becomes increasingly crucial, guiding the development of strategies that enhance the effectiveness of digital teaching in preparing college students for the challenges of the contemporary academic and professional world.

#### 4.1 Data analysis

Demographic characteristics of the research participants as showed in Table 1, underwent a thorough examination through the application of descriptive statistics. This encompassed an insightful analysis of key elements such as age, gender, educational background, and years of teaching experience. Furthermore, the utilization of descriptive statistics extended to quantifying the attitudes of vocational college teachers regarding the digital teaching into their lesson plans, thereby effectively addressing the tertiary education research inquiry. This comprehensive approach not only unveils the demographic profile of the participants but also provides a nuanced understanding of the teachers' perspectives and their readiness to incorporate technology in the educational setting.

*Table 1: The participant's gender.*

Gender	Frequency(N)	Percentage( %)
Male	9	15
Female	51	85
Total	60	100

#### 4.1.1. Distribution of Participants by Gender

The visual representation presented in Table 2 delineates the gender distribution among the 60 participating teachers, unveiling a conspicuous gender asymmetry. The participant pool consists of 9 male teachers and 51 female teachers. Significantly, there is a considerable overrepresentation of female participants compared to their male counterparts, with the number of female teachers exceeding that of males by more than ninefold. This substantial gender disproportionality serves as a compelling indicator of the marked prevalence of female teachers within the teaching profession. This noteworthy gender disparity prompts a thoughtful consideration of its potential implications on various aspects of the teaching profession, including teaching methodologies, educational perspectives, and the integration of modern educational technologies. Understanding and addressing these gender dynamics is essential for fostering inclusivity and ensuring equitable development within the educational landscape. The distinct prevalence of female teachers may influence the adoption and implementation of digital teaching practices, warranting a nuanced examination of how gender dynamics intersect with the evolving landscape of educational technology.

Table 2: Participants' Age Range

Age	Frequency(N)	Percentage (%)
20-29 years old	24	40
30-39 years old	15	25
40-49 years old	12	20
50-59 years old	9	15
Total	60	100

#### 4.1.2. Distribution of Participants by Age Group

The second dimension subjected to comprehensive descriptive scrutiny relates to the age composition of the 60 participating teachers. According to Table 3, the detailed breakdown discloses that 24 teachers fall within the youthful age range of 20 to 29 years, while an additional 15 teachers belong to the age bracket of 30 to 39. Moreover, 12 teachers are positioned within the 40 to 49 age group, and a more restricted number of 9 teachers are found in the 50 to 59 age range. Importantly, the data elucidates a discernible trend of diminishing participant numbers with advancing age, indicating a noticeable decline in the representation of teachers in the more senior age categories.

Table 3: Assessment of Participants' Academic Proficiency

Education level	Frequency(N)	Percentage (%)
Bachelor's Degree	15	25
Master's Degree	36	60
Doctoral Degree	6	10
Others	3	5
Total	60	100

#### 4.1.3. Educational attainment

Shown in Table 4, the third aspect of the descriptive analysis centers on the educational qualifications of the participants. Out of the 60 teachers in the study, 42 hold diplomas or higher degrees from teacher's colleges, while 18 possess bachelor's degrees or above. Additionally, one teacher has a master's degree and other educational qualifications. It's worth noting that in the questionnaire, there were no respondents who held Ph.D. degrees or technical secondary school degrees<sup>[9]</sup>. Therefore, the category labeled "other qualifications" may encompass varying educational backgrounds, potentially ranging from higher to lower qualifications. The outcomes of this study reveal a prevailing trend that the majority of vocational college teachers exhibit a cheerful disposition towards digital teaching within classrooms. In contrast, quantitative analysis provides valuable insights into the prevalence of certain attitudes.

Table 4: Experience Analysis of the Participants

Years of Teaching Experiences	Frequency(N)	Percentage (%)
0-5 years	36	60
6-10 years	12	20
11-15 years	6	10
16-20 years	3	5
21 years and above.	3	5
Total	60	100

#### 4.1.4. Educators' Pedagogical Tenure

The fourth dimension scrutinized via descriptive analysis revolves around the teaching experience of

the participants. The data manifests a predominant pattern, with a significant majority of teachers, totaling 36, possessing teaching experience within the range of 0 to 5 years. Furthermore, 12 teachers boast a moderately higher level of teaching experience falling within the bracket of 6 to 8 years, while an additional 6 teachers have accumulated 11 to 15 years of teaching practice. Notably, the group with the lowest representation comprises teachers with 16 to 20 years or more of teaching experience, consisting of three individuals. Expanding the spectrum, an additional six teachers demonstrate a considerable depth of expertise, with 21 or more years of teaching experience. This nuanced breakdown not only reveals the diverse distribution of teaching experience among the participants but also offers valuable insights into the collective expertise within the cohort.

## 5. Discussion

Expanding further on the research findings from Table 5, it becomes evident that vocational college instructors not only exhibit a notably positive disposition towards the incorporation of technology but also contribute to a broader consensus within the teaching community. The overwhelming agreement, particularly surpassing the 50% threshold, emphasizes the widespread acknowledgment of the multifaceted advantages associated with digital teaching in the tertiary education landscape.

One of the standout observations is the statement "The use of digital teaching makes learning more enjoyable," which boasts the highest mean score (mean = 4.39). This observation not only underscores the instructors' unwavering belief in the positive impact of technology on the learning experience but also places a significant emphasis on the enjoyment factor. This aligns well with contemporary educational paradigms that recognize the role of engagement and enjoyment in fostering effective learning environments. Moreover, the consistency of these findings with previous research, such as the work of Bicen and Kocakoyun<sup>[10]</sup>, strengthens the validity of the claim that digital tools.

Additionally, the findings suggest the need for a holistic approach to technology integration that goes beyond the tools themselves. Instructors may benefit from guidance on designing pedagogically sound digital learning activities that align with their teaching goals and objectives. Furthermore, considerations for addressing potential challenges related to student engagement, social interactions, and the balance between digital and traditional teaching methods should be incorporated into professional development initiatives.

*Table 5: The feedback of the questionnaire*

Items	Mean(N=50)	Std.Deviation
1. Digital teaching in the classroom helps the college students to be more engaged in learning.	4.05	0.673
2. Digital teaching in the classroom helps the teacher to bring outside resources into the classroom more easily.	4.28	0.573
3. Digital teaching in the classroom helps to make activities more enjoyable.	4.39	0.562
4. Digital teaching in the classroom makes teaching more effective.	4.14	0.604
5. Digital teaching in the classroom facilitates the teacher's workflow and classroom management.	4.15	0.598
6. Digital teaching helps the teachers to access students' learning.	4.37	0.581

In addressing research question 2, which aimed to ascertain variations in beliefs regarding the use of technology in teaching pupils based on the academic qualifications of college teachers, a one-way ANOVA was employed, referring to Table 6. The resulting F-value [F=2.383, p=.042] for the group design categorized by teachers' educational qualifications indicated a statistically significant impact, with  $p < 0.05$ . This implies that, statistically speaking, teachers' beliefs concerning the integration of digital learning into tertiary education for college students exhibit noteworthy differences, even when considering their diverse levels of educational attainment. Therefore, based on the ANOVA results, discernible disparities exist in beliefs regarding the use of technology in teaching pupils among tertiary education teachers based on their educational qualifications.

Therefore, the one-way ANOVA results underscore the significance of teachers' educational qualifications in influencing their beliefs regarding the use of technology in tertiary education. As the educational landscape continues to evolve, acknowledging and addressing these disparities can contribute to the development of more targeted and impactful strategies for integrating digital teaching practices in tertiary education.

Table 6: *Belief in the use of technology: One-Way ANOVA*

Source	ss	df	Mean Square	F	Sig.	Mean	Std. Deviation
Between Groups	484.917	3	161.639	2.383	0.82	2.78	0.679
Within Groups	3120.703	46	67.841				
Total	3605.620	49					
*SS=Sum of squares							

According to Table 7, expanding on the ANOVA findings, the statistical insignificance of the F-value [F=518, p=.43] implies that the observed variations in beliefs about the application of technology in teaching vocational college students cannot be attributed to differences in the number of years of teaching experience among educators. This suggests a noteworthy consistency in instructors' perspectives on digital teaching across diverse levels of teaching experience. Despite the wide range of cumulative teaching backgrounds, the shared perceptions regarding the use of technology for educating college students indicate a commonality in their attitudes. In conclusion, while cumulative teaching experience may not be a significant factor in explaining the variations in beliefs about digital teaching, further investigation is warranted to uncover the intricate interplay of factors shaping vocational college instructors' perspectives in the realm of technology-enhanced education.

Table 7: *The One-Way Analysis of Variance examining attitudes towards utilizing digital teaching for student instruction, stratified by educational qualifications within the context of vocational college education*

Source	ss	df	Mean Square	F	Sig.	Mean	Std. Deviation
Between Groups	158.34	3	153.531	518	0.43	1.98	1.421
Within Groups	3227.875	43	74.420				
Total	3503.517	45					
*SS=Sum of squares							

## 6. Conclusion & Recommendations

The analysis of results not only reveals insights into the prevailing attitudes of vocational college instructors towards digital teaching but also sheds light on broader demographic and experiential factors that may influence these perspectives. The notable gender disparity, with a predominant representation of female teachers in surveyed vocational colleges, suggests potential implications for the adoption of digital teaching practices. <sup>[1]</sup> Understanding the distinct attitudes towards technology integration among educators of different genders becomes imperative for the effective implementation of digital teaching strategies.

Turning attention to teaching experience, a significant proportion of teachers have 0-5 years of experience, implying a potential necessity for increased support and training in integrating technology into their teaching practices. Simultaneously, a subset of teachers possesses more extensive teaching experience, warranting the implementation of tailored support measures to address their unique needs. Recognizing the diversity in teaching experience highlights the importance of adopting a differentiated approach in providing professional development opportunities that address the varying levels of digital teaching proficiency among vocational college instructors.

While quantitative analysis provides valuable insights into the prevalence of certain attitudes, a deeper understanding of the underlying reasons necessitates qualitative studies. Qualitative research becomes imperative to delve into the nuanced motivations and concerns shaping teachers' attitudes towards digital teaching, providing a holistic understanding of the factors influencing the adoption and acceptance of digital teaching practices.

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