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Instruction Teaching Support System and Teaching Competency in Applied Colleges , China

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Abstract: This research examines the effectiveness of the Instruction Teaching Support System and Teaching Competency in Applied Colleges in China, surveying 303 teachers and 381 students using a quantitative approach. The findings reveal that the school's teaching support initiatives have effectively addressed teachers' needs for professional development, contributing positively to their teaching practices and career growth. Teachers expressed high satisfaction with the support system, noting its positive impact on daily teaching and career advancement. The management system was seen as well-organized, with clear development pathways and strong institutional backing for improving teaching quality. The school's performance incentives, such as merit-based pay, promotions, and welfare benefits, were widely appreciated for motivating teachers. Teachers also valued the diverse skills training opportunities provided by the school, which helped them adapt to modern educational demands. Students also rated their teachers highly, particularly in terms of professionalism, ethical conduct, and assessment abilities, indicating the positive influence of the school's support system on teaching competency. Overall, the study concludes that a well-structured teaching support system is crucial for fostering teachers' professional growth and enhancing teaching quality.

Keywords: Teaching Support System, Teaching Competency, Teacher Ethics, Teaching Management System.

1. Introduction

Teaching quality is a fundamental driver of higher education development, with teachers' competency being a critical factor in ensuring that quality. China, home to the world's largest education system, boasts over 3,000 higher education institutions, including more than 1,700 public applied colleges that serve more than 11 million students and employ approximately 960,000 teachers [1]. As the higher education landscape evolves, the "14th Five-Year Plan" highlights the urgent need for high-quality undergraduate education and urges the transformation of general universities into applied colleges [2]. This ongoing transformation is crucial for addressing the rapidly changing educational needs of the country. Teacher competency, which is a key criterion in assessing professional teaching effectiveness, plays a central role in ensuring that students achieve their learning outcomes and succeed in their academic and professional pursuits [3].

The Teaching Support System (TSS) is designed to address the various needs of educators by providing comprehensive support in areas such as teaching training, instructional resources, and evaluation mechanisms. These systems aim to enhance teachers' competency, improve the quality of education, and create a conducive environment for both teaching and learning [4]. With growing attention being placed on the development of teaching support systems in Chinese higher education, particularly in applied colleges, the impact of these systems on teaching competency has become an important focus of academic research. This study aims to investigate how the TSS influences teachers' professional development and its implications for teaching quality.

1.1 Evaluation of the Current Teaching Support System

The evaluation of the current Teaching Support System in applied colleges serves as a critical starting point for understanding its effectiveness. Applied colleges, with their unique focus on practical training and career-oriented education, require teaching support systems that align with the specific needs of both educators and students. This section will review the status of teaching support systems in these institutions, focusing on the extent to which they provide adequate training, guidance, and resources. Training programs for teachers are essential for ensuring that they possess the pedagogical skills necessary to deliver quality education. Additionally, resources such as teaching materials, technology platforms, and support from academic leadership are vital for enabling effective teaching. Evaluating the current infrastructure of these systems helps identify strengths and gaps, ultimately guiding the enhancement of teaching support to meet evolving educational demands.

1.2 Assessment of Teaching Competency

The assessment of teaching competency forms another key area of this research. Effective teaching competency is not only about subject matter knowledge but also includes the ability to design and implement engaging lessons, manage classroom dynamics, and foster positive teacher-student relationships. This section will explore how students evaluate their teachers' competencies across various dimensions, including teaching methodology, communication skills, and their ability to create an engaging learning environment. Student evaluations serve as an essential feedback mechanism that highlights areas for improvement and reflects the overall impact of teaching support systems on educators' professional

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growth. By examining student perceptions of teacher competency, the study aims to provide insights into how well current teaching support initiatives are enhancing educators' abilities to meet the diverse needs of students.

1.3 Case Analysis and Comparative Research

To gain a comprehensive understanding of the relationship between teaching support systems and teaching competency, this study will include case analyses and comparative research. By examining different applied colleges across China, the study will identify variations in the structure and effectiveness of teaching support systems, as well as differences in teaching competency outcomes. This section will focus on comparing the success of teaching support initiatives in institutions with varying levels of resources, management practices, and institutional cultures. Such comparative research helps reveal how specific components of the support system—such as teacher training, resources, and institutional policies—affect teaching practices and outcomes. By exploring both successful and less effective examples, the research will offer valuable insights into how teaching support systems can be optimized to enhance teaching quality in applied colleges.

1.4 Correlation Analysis

This research will include a correlation analysis to examine the relationship between the completeness of the teaching support system and teachers' competency levels. Specifically, the study will analyze how well-structured support systems impact various aspects of teaching, including teacher-student engagement, feedback mechanisms, and overall teaching effectiveness. A robust teaching support system is expected to foster greater teacher engagement, improve the quality of student interactions, and provide valuable feedback to teachers, ultimately enhancing their instructional practices. This section will analyze quantitative data to determine how the support system's effectiveness is correlated with improvements in teachers' teaching competency. By identifying these correlations, the research aims to demonstrate the importance of a comprehensive and well-supported teaching environment in fostering teacher professional development and enhancing the quality of education in applied colleges.

2. Method

2.1 Purpose of the Research

This research aims to explore the impact of the teaching support system on the teaching ability of teachers in applied colleges in China. The research evaluates the effectiveness of various components of the institutional teaching support system, including organizational structure, professional support, resource provision, infrastructure, training mechanisms, welfare benefits, and opportunities for professional development. Additionally, the research analyzes the current status of teachers' teaching competency, encompassing areas such as professional ethics, curriculum understanding, student cognition, classroom teaching skills, and academic assessment abilities. Furthermore, this research examines the correlation between teaching competency and the institutional teaching support system. Based on the findings, recommendations are proposed to optimize the teaching support system to enhance teaching abilities, which will benefit not only the teachers but also students, schools, families, and society as a whole.

2.2 Research Model

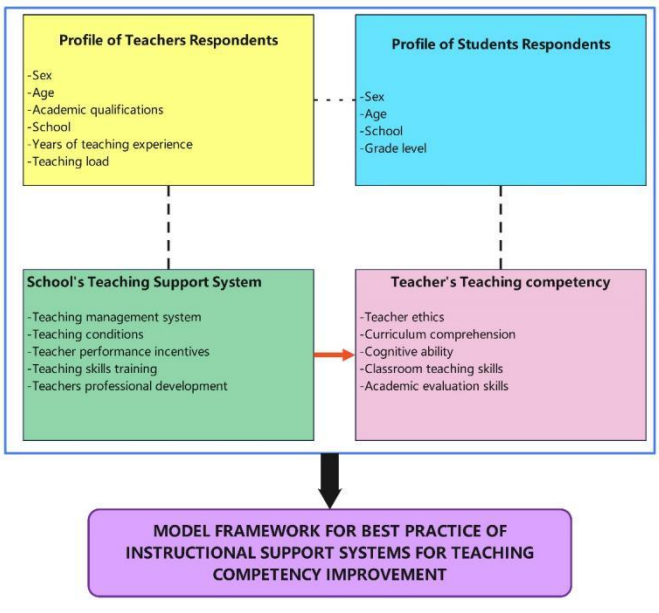

Figure 1 Research Paradigm

Figure I shows how the researcher worked on the research topic. It includes demographic information such as sex, age, and educational background of the ed teachers and teaching job information such as school, years of teaching experience, teaching load, and collects relevant data. Respondent teachers evaluated the school's teaching support system. Afterward, the collected data on the profile of the responded teachers and the assessment of the teaching support system were statistically processed to analyze whether there is a significant difference in the assessment of the teaching support system when the profile is used as a test factor.

It is important to note that the conceptualization of this research is rooted in the premise that school instructional support systems contribute to teacher competency and teaching quality. Figure 1 visually illustrates how influences, assessments, and outcomes are related in this context, providing a structured representation of the key elements of this research.

2.3 Research Sample

In this research, the variable of interest to the researcher is whether there is a significant correlation between the school instructional support system and teachers' instructional competency, which can inform the paths and strategies for improving the school instructional support system and enhancing teachers' instructional competency. According to the research objectives and the nature of the variables, the quantitative descriptive research method was chosen for this research. The quantitative data obtained through the questionnaire provided valuable insights into the prevalence and distribution of participants' perceptions of instructional support and teacher competency.

The researcher is based in Nanning, Guangxi Province. There are more than 60 applied colleges here. The researcher consciously selected three applied colleges. These three schools cover all types of applied colleges including science and technology applications, political and legal applications, and humanities and education applications.
The respondents are teachers and students from the three sampled schools. A purposive sampling technique was used to select specific objects that meet the requirements of the research as survey participants. The teachers need to fulfill the following criteria: (1) Voluntary participation in this research. (2) Reached at least one year of employment and have teaching experience. (3) Have direct experience using school instructional support programs or resources. For Students, They are required to meet the following criteria: (1) Volunteer to participate in this research. (2) Being enrolled in the school for more than six months. (3) Being from different grade levels.
The total number of teachers in the three schools is 1420 and the total number of students is 41,300. A confidence level of 95% and a margin of error of 5% is assumed. Utilizing the Qualtrics sample sampling online calculator yields the following sample sizes: 303 teachers and 381 students. Specifically, as the table follows:

Sample of Respondents

College	Teacher Population	Sample size	Student Population	Sample size
School A	640	136	17,000	155
School B	400	87	12,000	111
School C	380	80	12,300	115
Total	**1420**	**303**	**41300**	**381**

2.4 Data collection tool

In this research, the variable of interest to the researcher is whether there is a significant correlation between the school instructional support system and teachers' instructional competency, which can inform the paths and strategies for improving the school instructional support system and enhancing teachers' instructional competency. According to the research objectives and the nature of the variables, the quantitative descriptive research method was chosen for this research. The quantitative data obtained through the questionnaire provided valuable insights into the prevalence and distribution of participants' perceptions of instructional support and teacher competency.
Data collection was primarily conducted through research questionnaires. The research designed and employed self-developed questionnaires for both teachers and students to assess relevant dimensions. Prior to implementation, the questionnaires underwent reliability and validity testing, demonstrating good reliability and validity. The questionnaires were then distributed electronically via the online survey platform Questionnaire Star mini-program, facilitating convenient data acquisition and effective sample collection. The entire data collection process lasted for one month.

2.5 Data analysis

This research primarily used SPSS statistical software as a tool to analyze the data collected. The process of data statistics and analysis was presented logically and appropriately to achieve the research objectives. In the data statistics phase, statistical analysis techniques such as descriptive statistics, correlation analysis, and regression modeling were analyze the quantitative data collected from the survey.
The Likert scale responses collected from the survey were analyzed using weighted means. The weighted mean was calculated by multiplying each response option by the corresponding weight (see the table below for details on the distribution of options and associated weight scores), adding the products, and dividing by the total number of responses. This approach was applied to provide a summary of all participants' scores on the school's instructional support system and teacher assessment of instructional competency.

Point	Point Range	Adjectival Description	Interpretation
4	3.50 – 4.00	Strongly Agree	Very good
3	2.51 – 3.50	Agree	Good
2	1.51 – 2.50	Disagree	Not Good
1	1.00 – 1.50	Strongly Disagree	Strongly Not Good

Weighted averages was used to calculate the average responses of the participants to the Likert scale, thus providing a quantitative summary of their perceptions.
Frequency analysis helped to determine the distribution of responses for each Likert scale item, thus providing a better understanding of participants' opinions.
1. The researcher used correlation analysis to examine the strength and direction of the relationship between instructional support systems and teacher competency variables. Regression analysis was used to explore the predictive relationship between instructional support systems and teacher competency while controlling for potential confounding variables. Inferential statistics such as regression analysis and analysis of variance (ANOVA) to test the relationship between

hypothesized and inferred variables are techniques that helped examine the association between instructional support systems and teacher competency.

Findings

3.1 Demographic profile of the student-respondents

Profile of the Student-Respondents

Demographic Profile	Categories	Frequency	Percentage
Sex	Male	167	55.12
	Female	136	44.88
	Total	303	100.00
Age	22-25 years old	47	15.51
	26-35 years old	98	32.34
	36-45 years old	69	22.77
	46-55 years old	61	20.13
	above 55 years old	28	9.24
	Total	303	100.00
Academic Qualifications	Below bachelor's degree	52	17.16
	Bachelor's degree	181	59.74
	Graduate degree	54	17.82
	Doctoral degree	16	5.28
	Total	303	100.00
School Affiliation	School A	136	44.88
	School B	87	28.71
	School C	80	26.40
	Total	303	100.00
Years of Teaching Experience	0-3 years	54	17.82
	4-6 years	37	12.21
	7-10 years	34	11.22
	11-20 years	48	15.84
	More than 20 years	130	42.90
	Total	303	100.00
Teaching Load	2 subjects or less	59	19.47
	3-4 subjects	110	36.30
	5-7 subjects	100	33.00
	8 or more subjects	34	11.22
	Total	**303**	**100.00**

This table provides a comprehensive overview of the demographic profile of the teacher-respondents. The table begins by detailing the gender distribution among the respondents. Of the 303 teachers surveyed, 167 are male, representing 55.12% of the sample, while 136 are female, constituting 44.88%. This total is reflective of the entire sample population.

Next, the age distribution of the respondents is outlined. The age group with the highest representation is the 26-35-year-old category, which includes 98 teachers, accounting for 32.34% of the respondents. Following this are the 36-45 years old group with 69 teachers (22.77%), the 46-55 years old group with 61 teachers (20.13%), the 22-25 years old group with 47 teachers (15.51%), and those above 55 years old with 28 teachers (9.24%). The age data cumulatively accounts for all 303 respondents.

The academic qualifications of the respondents are also presented. The majority of the teachers hold a bachelor's degree, with 181 respondents (59.74%). Those with below a bachelor's degree numbered 52 (17.16%), while 54 respondents (17.82%) possess a graduate degree, and 16 respondents (5.28%) hold a doctoral degree. Together, these qualifications cover all 303 teachers surveyed.

School affiliation is another key demographic variable in this table. The largest group of respondents, 136 teachers (44.88%), are from School A. School B accounts for 87 respondents (28.71%), and School C comprises 80 respondents (26.40%). These figures total the complete respondent population.

Years of teaching experience is segmented into several categories. The group with the most extensive teaching experience, more than 20 years, includes 130 respondents, making up 42.90% of the sample. This is followed by the 0-3 years category with 54 respondents (17.82%), the 11-20 years category with 48 respondents (15.84%), the 4-6 years category with 37 respondents (12.21%), and the 7-10 years category with 34 respondents (11.22%). Collectively, these categories encompass all 303 respondents.

Finally, the teaching load is categorized by the number of subjects taught. The largest segment, teaching 3-4 subjects, includes 110 respondents (36.30%). This is followed by those teaching 5-7 subjects with 100 respondents (33.00%), those

teaching 2 subjects or less with 59 respondents (19.47%), and those teaching 8 or more subjects with 34 respondents (11.22%). These categories complete the demographic profile of the 303 teachers surveyed.

3.2 Assessment of teacher-respondents on the teaching Support System

Summary Assessment of the Teaching Support System

Domains	Mean	SD	Verbal Description/ Interpretation	Rank
Teaching Management System	3.10	0.79	Agree/Good	2.5
Teaching Conditions	3.09	0.81	Agree/Good	4.5
Teaching Performance Incentives	3.09	0.78	Agree/Good	4.5
Teaching Skills Training	3.12	0.76	Agree/Good	1
Teacher Professional Development	3.10	0.78	Agree/Good	2.5
Teaching Support System	3.10	0.77	Agree/Good	-

Scale:1-1.50: Strongly Disagree/Poor; 1.51-2.50: Disagree/Fair; 2.51-3.50: Agree/Good 3.51-4.00: Strongly Agree/Very Good

This is a summary of the overall teaching support system, presenting the mean scores, standard deviations (SD), verbal descriptions or interpretations, and ranks for various domains. The domain with the highest rank is "Teaching Skills Training," which has a mean score of 3.12 and an SD of 0.76. This indicates that respondents strongly agree that the training provided for teaching skills is effective and supportive, interpreted as "Agree/Good."

Following closely in rank are "Teaching Management System" and "Teacher Professional Development," both with a mean score of 3.10. The SDs for these domains are 0.79 and 0.78, respectively. These scores reflect strong agreement among respondents that the management system and professional development opportunities are well-implemented, both interpreted as "Agree/Good."

The domains "Teaching Conditions" and "Teaching Performance Incentives" share the same mean score of 3.09 and SDs of 0.81 and 0.78, respectively. These domains are tied in rank at fourth place, indicating a positive perception of teaching conditions and performance incentives provided by the school, interpreted as "Agree/Good."

Overall, the composite score for the Teaching Support System is a mean of 3.10 with an SD of 0.77, interpreted as "Agree/Good." This overall score suggests that respondents generally perceive the teaching support system in their school to be effective and supportive across various domains, contributing positively to their teaching experience.

It can be seen that the main programs in the school instructional support system that teachers can directly benefit from are teaching skills training, instructional management system, and teacher professional development. This is consistent with the researcher's practical experience (Hou Haoxiang. 2023).

In addition, it is important to reiterate that the three sample schools selected for this research are very representative. They all have a very good quality of teaching and a reputation for running schools and stand in the first tier of schools in the region. These are corroborated in the findings.

3.3 Demographic profile of the student-respondents

Profile of the Student-Respondents

Demographic Profile	Categories	Frequency	Percentage
Sex	Male	237	62.20
	Female	144	37.80
	Total	381	100.00
Age	18-20 years old	176	46.19
	21-25 years old	204	53.54
	26-30 years old	1	0.26
	Total	381	100.00
School	School A	155	40.68
	School B	115	30.18
	Guangxi Normal College	111	29.13
	Total	381	100.00
Grade	Grade 1	109	28.61
	Grade 2	152	39.90
	Grade 3	97	25.46
	Grade 4	23	6.04
	Total	**381**	**100.00**

This table provides a detailed account of the demographic profile of the student-respondents. The table starts with the gender distribution of the respondents. Out of the 381 students surveyed, 237 are male, which constitutes 62.20% of the total, while 144 are female, making up 37.80%. This demographic aspect is reflective of the entire sample population.

Following this, the table presents the age distribution of the student-respondents. The majority of the students fall within the 21-25 years age group, with 204 students representing 53.54% of the respondents. The 18-20 years age group includes 176 students, accounting for 46.19%, and the 26-30 years age group has 1 student, making up 0.26%. These age categories sum up to the total number of 381 respondents.

The school affiliation of the student-respondents is another demographic variable shown. The largest group of students, 155 respondents (40.68%), are from School A. This is followed by 115 students (30.18%) from School B, and 111 students (29.13%) from Guangxi Normal College. These figures together represent the entire respondent population.

Lastly, the table outlines the grade level distribution of the respondents. The highest proportion of students are in Grade 2, with 152 respondents (39.90%). This is followed by 109 students (28.61%) in Grade 1, 97 students (25.46%) in Grade 3, and 23 students (6.04%) in Grade 4. These grade levels collectively account for all 381 student respondents surveyed.

Through these demographic details, the table provides a comprehensive overview of the student-respondent profile, encompassing gender, age, school affiliation, and grade level.

3.4 Assessment of student-respondents on the Teaching Competency

Summary Assessment of the f Teaching Competency

Domain	Mean	SD	Verbal Description/ Interpretation	Rank
Teacher Ethics	3.36	0.74	Agree/Good	1
Curriculum Comprehension	3.33	0.73	Agree/Good	4.5
Cognitive Ability	3.33	0.72	Agree/Good	4.5
Classroom Teaching Skills	3.35	0.74	Agree/Good	2
Academic Evaluation Skills	3.34	0.71	Agree/Good	3
Teaching Competency	3.34	0.71	Agree/Good	-

Scale: 1-1.50: Strongly Disagree/Poor; 1.51-2.50: Disagree/Fair; 2.51-3.50: Agree/Good 3.51-4.00: Strongly Agree/Very Good

This table provides a summary of teaching competency, presenting the mean scores, standard deviations (SD), verbal descriptions or interpretations, and ranks for various domains. The domain with the highest rank is "Teacher Ethics," which has a mean score of 3.36 and an SD of 0.74. This indicates that respondents strongly agree their teachers exhibit good ethical behavior, interpreting it as "Agree/Good."

Following closely in rank is "Classroom Teaching Skills," with a mean score of 3.35 and an SD of 0.74. This reflects strong agreement that teachers possess effective classroom teaching skills, also interpreted as "Agree/Good."

The domain "Academic Evaluation Skills" ranks third, with a mean score of 3.34 and an of 0.71. This suggests respondents agree their teachers are competent in evaluating academic work, interpreted as "Agree/Good."

Both "Curriculum Comprehension" and "Cognitive Ability" are tied in rank at fourth place, each with a mean score of 3.33 and SD of 0.73 and 0.72, respectively. These scores indicate that respondents generally agree their teachers have a good understanding of the curriculum and cognitive abilities, both interpreted as "Agree/Good."

Overall, the composite score for Teaching Competency is a mean of 3.34 with an SD of 0.71, interpreted as "Agree/Good." This overall score suggests that respondents generally perceive their teachers' competency positively across various domains, recognizing their ethical behavior, teaching skills, evaluation skills, curriculum comprehension, and cognitive understanding.

That is, the surveyed students recognized their teachers' teaching ability more highly. The three aspects of teacher ethics, teaching skills, and academic evaluation skills are also the most valued elements by students. The study of (Du Hugen. 2023) suggests that teacher ethics resides as a central element in student evaluation. Classroom teaching skills, academic assessment skills, curriculum comprehension, and cognitive ability to recognize learning situations remain important considerations of teachers' teaching ability (Bian Dandan, Zong Xuya.2023).

3.5 Relationship between the Teacher Support System and Teaching Competency

Correlation between Teacher Support System and Teaching Competency

		Teaching Management System	Teaching Conditions	Teaching Performance Incentives	Teaching Skills Training	Teacher Professional Development	Teaching Support System	Interpretation
Teacher Ethics	Pearson-r	0.45	0.40	0.38	0.50	0.47	0.42	**significantly correlated**

	p-value	0.03	0.04	0.04	0.02	0.03	0.04	**significantly correlated**
Curriculum Comprehension	Pearson-r	0.42	0.41	0.36	0.44	0.40	0.39	**significantly correlated**
	p-value	0.04	0.03	0.05	0.03	0.04	0.05	**significantly correlated**
Cognitive Ability	Pearson-r	0.48	0.45	0.42	0.46	0.43	0.41	**significantly correlated**
	p-value	0.03	0.04	0.04	0.03	0.04	0.04	**significantly correlated**
Classroom Teaching Skills	Pearson-r	0.43	0.40	0.39	0.48	0.45	0.42	**significantly correlated**
	p-value	0.04	0.05	0.05	0.03	0.03	0.04	**significantly correlated**
Academic Evaluation Skills	Pearson-r	0.46	0.44	0.40	0.47	0.44	0.43	**significantly correlated**
	p-value	0.03	0.04	0.04	0.03	0.04	0.00	**significantly correlated**
Teaching Competency	Pearson-r	0.50	0.48	0.45	0.49	0.46	0.44	**significantly correlated**
	p-value	0.02	0.03	0.04	0.03	0.04	0.04	**significantly correlated**

Based on the research hypothesis, the researcher needs to determine the criteria for deciding the level of significance.The significance level for the hypothesis test was set at $\alpha = 0.05$. This criterion indicates that any observed difference or relationship with a p-value of less than 0.05 will be considered statistically significant.

This table presents the correlation between the Teacher Support System and Teaching Competency, with Pearson correlation coefficients (r) and p-values for various domains. For "Teacher Ethics," the Pearson correlation coefficients range from 0.38 for Teaching Performance Incentives to 0.50 for Teaching Skills Training. The p-values are all below 0.05, indicating significant correlations. This suggests that various aspects of the Teacher Support System positively correlate with Teacher Ethics.

In "Curriculum Comprehension," the Pearson correlation coefficients range from 0.36 for Teaching Performance Incentives to 0.44 for Teaching Skills Training. The p-values are all below 0.05, indicating significant correlations. This suggests a positive correlation between the Teacher Support System and Curriculum Comprehension.

Regarding "Cognitive Ability," the Pearson correlation coefficients range from 0.41 for Teaching Support System to 0.48 for Teaching Management System. The p-values are all below 0.05, indicating significant correlations. This suggests a positive correlation between the Teacher Support System and Cognitive Ability.

For "Classroom Teaching Skills," the Pearson correlation coefficients range from 0.39 for Teaching Performance Incentives to 0.48 for Teaching Skills Training. The p-values are all below 0.05, indicating significant correlations. This suggests a positive correlation between the Teacher Support System and Classroom Teaching Skills.

In the domain of "Academic Evaluation Skills," the Pearson correlation coefficients range from 0.40 for Teaching Performance Incentives to 0.47 for Teaching Skills Training. The p-values are all below 0.05, indicating significant correlations. This suggests a positive correlation between the Teacher Support System and Academic Evaluation Skills.

Overall, for "Teaching Competency," the Pearson correlation coefficients range from 0.44 for Teaching Support System to 0.50 for the Teaching Management System. The p-values are all below 0.05, indicating significant correlations. This suggests a positive correlation between the Teacher Support System and overall Teaching Competency.

In summary, it shows that all aspects of the Teacher Support System are positively and significantly correlated with various dimensions of Teaching Competency, indicating that improvements in the support system are associated with higher teaching competency.

The results revealed in Table 25 are fully consistent with the findings of existing related studies. Although different scholars are focusing on different dimensions to interpret the research. For example, the school teaching support system for the cultivation, molding, assessment, reward, and punishment of teachers' professional ethics is very complete, and it is regarded as the first and foremost foundational element of teachers' teaching ability. (Stanley Liu, Xuquan Wang.2023). Teachers' curriculum comprehension skills are highly positively correlated with the teaching support system, which is supported by relevant research.

Teachers' classroom teaching skills are positively correlated with instructional support systems (Liao Heping, Kong Lingna, Zeng Lin.2023). This also explains why famous schools are more likely to produce famous teachers. The better the school the more good teachers there are, and young teachers grow and develop better and faster in good schools.

It involves the teachers' ability to recognize the academic situation and to evaluate academics, which is inextricably linked to the school's instructional support system. Generally speaking, many schools include learning cognizance and academic assessment in the teaching specification for teachers. When teachers write lesson plans, the analysis of learning situations, classroom teaching design, and students' homework assignments are required items. The lesson plans are the teaching

materials and inspection items required by the school teaching management department (Liu Mengyuan.2023).

4. Discussion

The findings from this study offer valuable insights into how both teachers and students perceive instructional support systems and teaching competency in applied colleges in China. By exploring the demographics of the respondents, the effectiveness of teaching support, and the students' assessment of teacher competency, we were able to uncover important relationships between the two. Specifically, the study highlights the connection between teacher support systems and teaching competency, which provides a clearer understanding of how these elements interact and impact educational outcomes.

4.1 Teacher Support System

Overall, the study reveals that teachers generally view the support systems in place as effective. Notably, "Teaching Skills Training" received the highest ratings (mean score: 3.12) across all categories, reinforcing the idea that teacher training plays a crucial role in improving teaching effectiveness. This aligns with existing research suggesting that practical teaching skills are particularly important in applied colleges, where hands-on learning is emphasized [5]. Teachers also gave positive feedback on the "Teaching Management System" and "Teacher Professional Development," echoing studies that highlight the value of structured management systems and continuous opportunities for professional growth in fostering quality teaching [6].

The positive reception of the teaching support system suggests that colleges with well-established support structures are better equipped to create effective teaching environments. The results from this study suggest that applied colleges in China are making meaningful progress in enhancing their instructional support systems, which in turn has a direct impact on improving teaching quality. It's clear that investing in teaching support is an essential step in raising educational standards [7].

4.2 Teacher Competency

When it comes to teacher competency, students tended to rate their teachers highly, especially in areas like "Teacher Ethics" and "Classroom Teaching Skills." This supports the idea that ethical conduct and solid teaching practices are foundational to teaching competency in applied colleges [8]. The study also found a strong connection between teacher support systems and teaching competency, especially in areas like "Classroom Teaching Skills" and "Academic Evaluation Skills." This suggests that a strong support system helps teachers improve their ability to evaluate student performance and manage classroom dynamics effectively.

One particularly interesting finding was that "Teacher Ethics" scored the highest (mean score: 3.36). This highlights the importance of professionalism and ethical behavior as a core component of teaching competency in China [9]. Given the cultural emphasis on integrity and ethics in Chinese education, it's not surprising that students placed such a high value on these qualities when evaluating their teachers.

4.3 Correlation Between Teacher Support and Teaching Competency

A key takeaway from this study is the significant positive correlation between the teaching support system and various aspects of teaching competency. Specifically, improvements in "Teaching Management Systems," "Teaching Skills Training," and "Teacher Professional Development" were all strongly associated with better teacher ethics, stronger classroom teaching skills, and more effective academic evaluation. This points to the fact that when institutions invest in comprehensive support systems for teachers, it leads to improved teaching outcomes across the board [10].

This finding reinforces the idea that teacher competency and support systems are mutually reinforcing. Studies have shown that teachers working in schools with robust support structures tend to demonstrate higher levels of competency, particularly in classroom management, curriculum comprehension, and student evaluation [11]. This interconnection underscores the importance of maintaining and strengthening teacher support systems in order to enhance teaching quality.

4.4 Implications for Applied Colleges

The implications of this study for applied colleges in China are clear. Both teachers and students agree that a strong teaching support system is essential for improving teaching competency. Educational institutions should continue to focus on developing and maintaining effective support systems, ensuring that teachers have access to the necessary resources, training, and professional development opportunities. This might include regular workshops, improved management systems, and better incentives for teaching excellence.

Moreover, the study emphasizes that teacher ethics and classroom teaching skills should be central to any efforts to enhance teaching competency. Teachers who embody high ethical standards and demonstrate strong teaching abilities have a significant impact on student learning and contribute to a culture of academic excellence. Therefore, applied colleges should not only prioritize academic qualifications and technical expertise but also work to cultivate a strong sense of professional ethics and pedagogical competence among their teaching staff.

5. Conclusion and Recommendations

5.1 Conclusions

Based on the findings of this research, several key conclusions can be drawn:

5.1.1 Objective Reference for Assessing Teacher Support Systems and Teaching Competency

The respondents and their profiles, as outlined in this study, provide a solid foundation for assessing both entrepreneurial leadership and innovative awareness. This can serve as a springboard for exploring future entrepreneurial development. In the context of teaching, these profiles also offer an objective reference for evaluating the teaching support system and

teaching competency, as well as their interrelationship. The insights gained can be used to devise methods that further improve and develop teaching competency in applied colleges.

5.1.2 Recognition of Teacher Competency

The positive feedback regarding teachers' competency demonstrates that students recognize and value the professionalism and effectiveness exhibited by teachers in their educational roles. This affirms the critical role of teacher competency in student satisfaction and learning outcomes, highlighting the importance of ongoing teacher development and support.

5.1.3 Inclusive and Balanced Teaching Support System

The research shows that the teaching support system implemented by schools is inclusive, effectively addressing the diverse needs of teachers from different backgrounds. Regardless of gender, age, or academic qualifications, the system provides support that helps teachers enhance their teaching practices. This universality and fairness are key strengths of the system, enabling teachers across all demographics to benefit from its resources and improve their teaching outcomes.

5.1.4 Multifaceted Support System for Teacher Development

The study highlights that the school's comprehensive support system has contributed significantly to teachers' skill development and professional growth. Key elements such as effective teaching skills training, a robust teaching management system, career development opportunities, favorable working conditions, and performance-based incentives have created a holistic support network. This system empowers teachers to reach their full potential and positively impacts their teaching effectiveness.

5.1.5 Emphasis on Teacher Professional Growth

It is evident that schools must prioritize the professional growth of their teaching staff. Systematic training and development not only support individual teachers in improving their skills but also benefit students by enhancing the overall quality of teaching. Ultimately, these efforts contribute to the school ' s educational goals and improve the learning experience for students.

5.2 Recommendations

5.2.1 Establish a Comprehensive Teacher Training and Development System

Schools should establish a continuous professional development system with clear pathways for teachers at different career stages. This should include induction training for new teachers, regular skill-building workshops for mid-career teachers, and advanced training for senior teachers. Tailoring development programs to the specific needs of teachers at various stages of their careers will ensure that every educator receives appropriate training to enhance their professional abilities.

5.2.2 Improve the Teaching Management System

It is recommended to set up a teaching steering group that regularly observes and provides feedback on teachers' teaching practices. This group should offer concrete suggestions for improvement, encouraging teachers to reflect on their methods and engage in continuous professional growth. By establishing a formal mechanism for feedback and guidance, schools can foster an environment of constant learning and self-improvement among teachers.

5.2.3 Enrich Teaching Resources and Optimize Modern Educational Tools

The development of "Smart Campuses" should be a priority. Schools should leverage advanced technologies like cloud computing, big data, and artificial intelligence to enhance the allocation and use of teaching resources. These technologies can also improve teaching effectiveness by providing data-driven insights and supporting personalized learning experiences for students.

5.2.4 Promote Cooperation and Team Building Among Teachers

Schools should establish teacher support teams that focus on addressing the challenges teachers face in the classroom. These teams would provide resources, guidance, and suggestions tailored to teachers' needs, helping them overcome obstacles and improve their teaching. Strengthening collaboration among teachers fosters a sense of community and support, enhancing overall morale and job satisfaction.

5.2.5 Strengthen Teacher-Student Relationships and Interaction

Finally, enhancing the teacher-student relationship is crucial for creating a positive learning environment. Schools should encourage and facilitate regular interaction between teachers and students, fostering a more supportive and engaging classroom atmosphere. This can be achieved through open communication channels, personalized feedback, and opportunities for collaborative learning, which will ultimately enhance student engagement and success.

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