

FACTORS AFFECTING THE EFFECTIVENESS OF COLLABORATIVE TEACHING AMONG VOCATIONAL SCHOOL TEACHERS IN YUNCHENG CITY

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Abstract: This study explored key factors influencing the effectiveness of collaborative teaching among vocational school teachers in Yuncheng City, China. A quantitative descriptive-correlational design was adopted, with a questionnaire survey distributed to 203 full-time teachers from four vocational colleges in Yuncheng City. Data were analyzed using descriptive statistics, Pearson correlation, and multiple regression. Results showed that all four predictors significantly and positively affected collaborative teaching effectiveness. Interpersonal Skills exerted the strongest influence ($\beta=0.285$), followed by Shared Goals and Vision ($\beta=0.240$), Organizational Support ($\beta=0.233$), and Professional Development ($\beta=0.192$). The model explained 69.1% of the variance ($R^2=0.691$), indicating strong explanatory power. This study enriches the application of collaborative teaching theories in Chinese vocational education and provides evidence-based implications for school administrators, teacher trainers, and policymakers.

Keywords: Collaborative teaching, Vocational school teachers, Teaching effectiveness, Influencing factors.

1. Introduction

Collaborative teaching, often defined as two or more educators working together to plan, instruct, and assess a shared group of students, has gained international recognition as a high-leverage instructional practice (Friend & Cook, 2016). Its potential to improve instructional quality, foster teacher professional growth, and enhance student learning outcomes is well-documented. A recent meta-analysis of 76 studies over nearly four decades confirmed a moderate, positive, and statistically significant effect of collaborative instruction on student achievement compared to single-taught controls, underscoring its empirical support (Kyndt et al., 2023). In the context of vocational education and training (VET), which is inherently interdisciplinary and practice-oriented, the imperative for collaboration is even more pronounced. Vocational teachers are tasked with bridging the gap between theoretical knowledge and industry-specific skills, a goal that increasingly demands the integrated expertise of educators from

different disciplinary backgrounds, as well as collaboration with industry partners. Effective collaborative teaching in this setting is not merely a pedagogical preference but a structural necessity for cultivating a workforce that is adaptable, innovative, and responsive to the ever-evolving demands of the modern economy (Billett, 2020).

In China, the national policy landscape has strongly underscored the importance of vocational education reform. The National Vocational Education Reform Implementation Plan issued by the State Council in 2019 signaled a clear shift in priorities, placing VET on an equal footing with general education and calling for profound changes in talent cultivation models. This includes a specific emphasis on strengthening the capacity of vocational teachers, promoting "school-enterprise cooperation," and exploring innovative teaching methods that integrate theory and practice (State Council, 2019). Building on this foundation, the 2024-2035 Master Plan on Building China into a Leading Country in Education and its

accompanying Three-Year Action Plan have further advanced this agenda. These recent policies explicitly champion the "New Dual Excellence" program in vocational education and foster deeper integration between scientific research and industry innovation, creating a systemic push for collaborative models that bridge educational institutions and industrial enterprises (Ministry of Education of China, 2024). By late 2025, vocational education in China had entered a "new phase" focused on high-quality integration with industry, with nearly 80% of specialized program clusters aligned with strategic and advanced manufacturing sectors (Ministry of Education of China, 2025). Consequently, collaborative teaching models, such as team teaching, interdisciplinary project-based learning, and the development of "dual-qualified" teacher teams, have been promoted as key strategies to achieve these national objectives. These policies create a macro-level demand for teachers to move beyond isolated instructional practices and engage in sustained, structured collaboration.

Despite these policy initiatives and isolated examples of innovation, the reality of collaborative teaching in Yuncheng's vocational schools is far from systematic or universally effective. The literature suggests that while teacher collaboration is widely promoted, the concept itself remains under-theorized, with competing definitions and a lack of universally accepted frameworks for practice (Vangrieken et al., 2015). This conceptual ambiguity can lead to uncertainty in teachers' engagement and a gap between policy intent and practical implementation. Preliminary observations and informal conversations with local educators, which motivated this study, reveal a significant gap between policy intent and practical implementation. While collaborative activities are nominally encouraged, their execution is often superficial, hampered by a range of persistent challenges. Teachers report uneven levels of engagement and commitment within teams, a lack of structured training on how to collaborate effectively, and inconsistent administrative support. These practical obstacles echo findings from international research, which identifies time constraints, communication breakdowns, misaligned schedules, and a lack of

institutionalized incentives as primary barriers to successful collaboration (Scruggs et al., 2007). Furthermore, a recent study on vocational classrooms in China highlights that while vocational teachers adopt informal, small-group-oriented approaches to enhance engagement, the successful orchestration of these collaborative activities requires a high degree of adaptive expertise and structured support that is often lacking (Zhao & Ko, 2024).

This gap is particularly acute in a mid-sized city like Yuncheng, where vocational colleges may have more limited access to resources, cutting-edge professional development, and connections with leading industries compared to their counterparts in major metropolitan centers. The challenge is not merely logistical but also cultural. Deep-seated traditions of independent teaching, coupled with institutional frameworks that may inadvertently prioritize individual performance over collective endeavor, can stifle the transition to a more collaborative instructional culture. While teachers may possess the foundational interpersonal skills necessary for interaction, the systemic mechanisms such as dedicated co-planning time, digital platforms for cross-disciplinary work, and evaluation systems that recognize and reward collaborative achievements are often underdeveloped. Moreover, the effectiveness of collaborative instruction may be influenced by factors that are often taken for granted in the literature, such as the specific qualifications of the collaborators or the structural conditions of their partnership, highlighting the need for context-specific investigation (Ramos et al., 2022).

Existing academic literature provides a robust theoretical foundation for understanding the factors that influence collaborative teaching. International studies have consistently pointed to the critical roles of shared goals and vision, interpersonal skills, ongoing professional development, and robust organizational support (Friend & Cook, 2016; Darling-Hammond et al., 2017). Research from other vocational contexts, such as applied technology schools in the UAE, reinforces this, showing significant correlations between collaborative practices and effective curriculum implementation, while also highlighting persistent barriers like time and communication gaps (Al-Taneiji & Ibrahim,

Population: 2,817 full-time teachers from four vocational colleges in Yuncheng City.

Table 3.1 Distribution of Population and Sample of Teachers in Yuncheng City

Grade Level	Population (Teachers)	Proportion (%)	Sample (Teachers)
Yuncheng Vocational & Technical University	1179	41.9	85
Shanxi Water Conservancy Vocational College	767	27.1	55
Yuncheng Agricultural Vocational College	596	21.2	43
Yuncheng Nursing Vocational College	275	9.8	20
Total	2817	100	203

Sample: 203 teachers selected via stratified random sampling proportional to institutional size.

Sample size justification: Calculated using G*Power 3.1 with effect size = 0.1, power = 0.95, $\alpha = 0.05$, and four predictors; the required minimum sample was 180, and 203 was adopted to reduce non-response bias (Soper, 2025).

Sample distribution: Yuncheng Vocational & Technical University (85), Shanxi Water Conservancy Vocational College (55), Yuncheng Agricultural Vocational College (43), Yuncheng Nursing Vocational College (20).

6.3 Research Instrument

A 5-point Likert questionnaire (1=Strongly Disagree to 5=Strongly Agree) was developed with four parts:

1. Demographic information (gender, teaching experience, professional title, school, collaborative teaching experience)
2. Predictor variables (40 items: 10 items per dimension)
3. Criterion variable (10 items: collaborative teaching effectiveness)
4. Open-ended questions (optional)

Validity: Three experts evaluated content validity; Item-Objective Congruence (IOC)=0.80-1.00 for all items. Reliability: Pilot test with 50 teachers; Cronbach's $\alpha = 0.91-0.94$ for all dimensions, indicating high internal consistency.

6.4 Data Collection and Analysis

Data collection: Paper questionnaires distributed with official approval letters; 203 valid responses were collected.

Analysis: Jamovi 2.6.44 was used for descriptive statistics (mean, standard deviation, skewness, kurtosis), Pearson correlation, and multiple regression analysis.

Open-ended data were thematically analyzed to supplement quantitative findings.

7. Results and Discussion

7.1 Research results

All variables scored above the midpoint (3.0), showing positive teacher perceptions:

Interpersonal Skills: $M=4.23$, $SD=0.62$ (highest)

Shared Goals and Vision: $M=4.12$, $SD=0.68$

Professional Development: $M=4.08$, $SD=0.71$

Organizational Support: $M=3.95$, $SD=0.75$ (lowest)

Collaborative Teaching Effectiveness: $M=3.98$, $SD=0.72$

Skewness and kurtosis values were within acceptable ranges, confirming normal data distribution.

7.2 Correlation Analysis

All predictors were significantly and positively correlated with collaborative teaching effectiveness ($p<0.01$):

Interpersonal Skills: $r=0.79$

Organizational Support: $r=0.78$

Shared Goals and Vision: $r=0.72$

Professional Development: $r=0.65$

Moderate to strong inter-correlations ($r=0.59-0.79$) existed among predictors, with no multicollinearity ($VIF<3$).

7.3 Discussion

H1: Shared Goals & Vision in the regression coefficient was ($\beta=0.240$) with a high coefficient of correlation ($r=0.72$), thus Goal Setting Theory was applicable in the local vocational education environment. This factor's large predictive ability shows that the same recognition of the goals of collaborative teaching, instructional design thoughts, and student skill training among teachers is an important prerequisite for the emergence of a cooperative synergy in the teaching team. In Yuncheng's vocational schools, which are close to local agriculture, manufacturing, and nursing industries with professional settings, shared goals that are close to the regional industrial skills demand can guide teachers to coordinate interdisciplinary teaching resources well, avoid the problem of redundant or contradictory teaching, and make sure that collaborative teaching is based on the core goal of cultivating practical and skilled talents. The high mean score of this factor ($M=4.12$) and the high mean

This study concludes that Shared Goals and Vision, Interpersonal Skills, Professional Development, and Organizational Support are significant factors affecting the effectiveness of collaborative teaching among vocational school teachers in Yuncheng City. Interpersonal skills emerged as the most influential factor, while organizational support was identified as a key area needing strengthening. The findings provide empirical evidence from a mid-sized Chinese city, enriching the theoretical application of collaborative teaching in vocational education contexts. For practice, it is recommended that school administrators strengthen organizational support by providing dedicated co-planning time, developing incentive mechanisms, and fostering a collaborative culture. Teacher training programs should focus on enhancing interpersonal collaboration skills. Policy makers should consider establishing clear guidelines and resource allocation to support collaborative teaching models. Future research could employ longitudinal designs to establish causality, incorporate qualitative methods for deeper insights, and explore the chain of influence from collaborative teaching to student outcomes.

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teacher professional development, and the optimization of teaching management in vocational education contexts, and he is committed to exploring practical strategies to improve the effectiveness of vocational education teaching through empirical research.

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