

THE FACTORS INFLUENCING THE PRACTICAL ABILITY DEVELOPMENT OF ART STUDENTS IN HIGHER VOCATIONAL COLLEGES IN SICHUAN PROVINCE, CHINA^{*}

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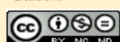
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Abstract

This study aimed to 1) examine the determinants of practical skills among art students in Chinese higher vocational institutions and 2) develop a training model by assessing the impact of four primary variables: student personality traits, professional attributes, educational management, and social practice resources. A sequential mixed-methods research approach was utilized. The initial objective involved a quantitative survey of 323 students utilizing the updated Student Quantitative Questionnaire, succeeded by structural equation modeling analysis to examine factor correlations. The second objective entailed conducting semi-structured interviews with 34 students to investigate contextual difficulties and strategies. The quality of the instrument was validated by reliability and validity assessments, with Cronbach's α values between 0.863 to 0.955. Path analysis using structural equation modeling revealed statistical

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significance at the 0.05 level for all pathways. Qualitative coding with reference point percentages ranging from 23.2% to 25.0% facilitated cross-validation for overall efficacy.

Research results were: 1) The results revealed that four primary variables are essential predictors of students' practical skills: artistic creation, professional practice, collaborative communication, and career growth. 2) A training model was constructed by integrating the structural equation modeling path coefficients with the qualitative coding ratios, focusing on collaboration among students, schools, and society, and the interconnection of curriculum, skills, personality, and feedback. This model provides empirical evidence for enhancing the development of practical skills in higher vocational art education.

Keywords: Practical ability development, Higher vocational art education, Structural equation modeling, Personality traits and professional qualities, Training model construction

Introduction

The development of practical skills has become a central focus in higher vocational art education, as programs increasingly emphasize internationalization, interdisciplinary learning, and practice-oriented training (Brown, 2022; McGrath & Yamada, 2023). Practical competence encompassing creative output, technical execution, and collaborative communication is widely recognized as essential for preparing art students for modern cultural and creative industries (Johnson, 2022; Clark, 2023). However, despite the rapid expansion of vocational art education and international cooperation in China, many institutions still struggle to translate these approaches into effective local practice. Persistent challenges including outdated curricula, insufficient hands-on training, weak school–industry partnerships, and superficial exchange programs create a gap between academic preparation and professional requirements, limiting students' capacity for

innovation, social adaptability, and the professional application of artistic skills (Markula & Aksela, 2022; Watson, 2024; Boss & Krauss, 2022). These challenges highlight the need for a comprehensive investigation of the factors that influence the acquisition of practical skills in vocational art education.

This study examines the key factors that shape the development of practical skills among art students in higher vocational colleges in Sichuan Province, China, and proposes a contextually relevant development model. Practical ability is defined as a multidimensional construct comprising artistic production, professional competence, collaborative communication, and career development. The study argues that practical skill development arises from the interaction between internal factors such as students' personality traits and professional attributes—and external factors related to educational management and social practice resources. By integrating these elements into a coherent conceptual framework, the study clarifies their structural relationships in direct alignment with its research objectives.

Objectives

1. To investigate the key factors influencing the development of practical ability among art students in higher vocational colleges in Sichuan Province, China.
2. To develop a practical ability development model for art students in higher vocational colleges in Sichuan Province, China.

Literature Review

A study of modern literature on higher vocational art education reveals a consensus that practical skills are shaped by both intrinsic student characteristics and extrinsic educational circumstances. Practical ability is typically characterized as the amalgamation of technical skills, creative expression, and the

implementation of artistic notions in genuine or professional settings (Johnson, 2022; Clark, 2023; Brown, 2022; Watson, 2024). The studies reviewed predominantly focus on internal factors such as learning motivation, self-efficacy, interest, personality traits, and cognitive style, which significantly influence engagement, persistence, and creative performance in practice-based learning (Brown, 2022; Wang & Chen, 2022; Johnson & Lee, 2023). Nonetheless, these student-level attributes are generally examined in isolation, with minimal attention to their functioning within organized educational or social contexts (Clark, 2023; Boss & Krauss, 2022).

A significant area of research concentrates on curriculum design and pedagogical frameworks. Research consistently indicates that curricula dominated by theory, inadequate practical training, and feeble collaboration between schools and industry hinder students' capacity to apply knowledge in professional contexts (Clark, 2023; Johnson, 2022). Although project-based learning, competency-based education, constructivist methodologies, and industry engagement are broadly supported, the majority of research examines these strategies conceptually or in isolation, providing scant empirical evidence regarding their integrated application within particular vocational art education settings (Boss & Krauss, 2022; Wang & Chen, 2022; Budiarti et al., 2021; Watson, 2024).

Existing research indicates that the development of practical skills arises from the interplay between internal characteristics and external educational and social contexts (Wang & Chen, 2022; Johnson, 2022; Smith, 2023). Nonetheless, significant information gaps persist. Previous research seldom employs integrated analytical frameworks that concurrently assess numerous factor categories, and there has been little focus on psychological dynamics, long-term developmental processes, new digital practice environments, and context-specific vocational art contexts. The gaps outlined in Table 1 (Davis, 2023; Clark, 2023; Wang & Kimura, 2019) underscore the necessity for systematic, contextually informed research

into the interplay of internal and external influences in the development of practical abilities.

Summary of Literature Review

Based on the literature review, the development of practical ability among higher vocational art students is influenced by three interrelated domains: individual attributes, school-based instructional conditions, and external practice environments. Practice-based learning's efficacy is determined by curriculum design, instructional approaches, educator qualifications, and resource availability, while student motivation, creativity, self-efficacy, and professional competence influence engagement and skill acquisition, as evidenced by prior research. External practice opportunities, such as internships, industry partnerships, and community-based initiatives, offer authentic contexts that facilitate the application of instructional knowledge and improve employability, according to additional research. Generally, the literature endorses a multilevel perspective on the development of practical skills; however, it also indicates a necessity for more comprehensive frameworks that investigate the joint contributions of individual, institutional, and social factors to the formation of practical abilities in vocational art education.

Conceptual Framework

Drawing on the review of related literature, the conceptual framework for the key factors influencing the development of practical ability among art students in higher vocational colleges can be summarized as follows.

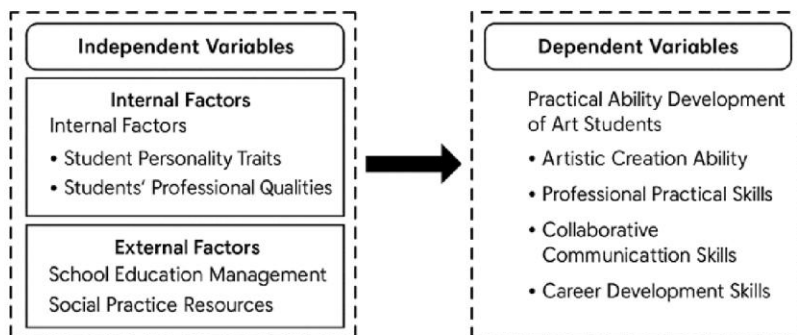


Figure 1 Conceptual Framework

Methodology

Research Design

This study utilized a mixed-methods approach, which involved the integration of qualitative inquiry and quantitative survey research, to investigate the factors that influence the development of practical skills among art students in higher vocational colleges and to facilitate the development of a model.

Population and Sample

Third-year art design students from higher vocational institutions in Guang'an and Chengdu comprised the quantitative population. A total of 323 students were selected through inclusion criteria and filled out the questionnaire. Purposive sampling was employed to acquire qualitative samples, which comprised 20 student representatives, 14 educators and administrators, and 8 experts in vocational training and art education. The Institutional Review Board granted ethical approval (Approval No. RSU-ERB2025/212.0608).

Research Instruments

A 40-item student questionnaire, which was adapted from Clark (2021), was employed to capture quantitative data. This questionnaire assessed four dimensions: personality traits, professional competencies, school educational

administration, and social practice resources. Three structured interview protocols were implemented to gather qualitative data from students, educators, and experts.

Data Collection

Questionnaire data were collected online using the Wenjuanxing platform. All sessions were recorded and transcribed, and qualitative data were collected through expert consultations, semi-structured interviews, and focus group discussions that were conducted on campus or remotely.

Data Analysis

SPSS was employed to analyze quantitative data, which included descriptive statistics, correlation analysis, and difference testing. Thematic analysis and classification were employed to analyze qualitative data in NVivo. To facilitate the construction and validation of the model, the results of both datasets were combined.

Results

Objective 1. Along with the four dimensions of practical ability (artistic creation ability, professional practice skills, collaborative communication skills, and career development competencies), the results suggest that there is variation across all four independent variables (student personality traits, professional competencies, school education management, and social practice resources). Table 1 summarizes the mean and standard deviations for each dimension.

Table 1 Descriptive Statistics of Study Variables

Variable	Minimum	Maximum	Mean	Standard Deviation	Skewness	Kurtosis
Student Personality Traits (SPT)	1.00	5.00	3.117	1.056	-0.335	-1.107
Student Professional Qualities (SPQ)	1.00	5.00	3.218	1.053	-0.409	-1.068
School Education Management (SEM)	1.20	5.00	3.251	1.063	-0.490	-1.013
Social Practice Resources (SPR)	1.00	5.00	3.197	1.061	-0.409	-0.943
Artistic Creativity Ability (ACA)	1.20	5.00	3.219	1.034	-0.442	-0.954
Professional Practice Skills (PPS)	1.00	5.00	3.167	1.091	-0.399	-1.001
Collaborative Communication Skills (CCS)	1.00	5.00	3.111	1.044	-0.305	-1.011
Career Development Skills (CDS)	1.00	5.00	3.229	1.082	-0.359	-1.103

Table 1 illustrates the variation across all eight core variables student personality traits, professional qualities, school education management, social practice resources, and the four dimensions of practical ability within the sample. The distributional statistics (skewness and kurtosis) are within acceptable limits,

Variables	Student Personality Traits	Career Development Skills	Collaborative Communication Skills	Professional Practice Skills	Artistic Creativity Ability	Social Practice Resources	School Education Management	Student Professional Qualities
Student Professional Qualities								1

Note. When the confidence level (double test) is 0.01, the correlation is significant.

Table 2 displays statistically significant correlations among all variables at the 0.01 level. Student personality traits demonstrate moderate positive correlations with career development skills and artistic creativity, while student professional qualities exhibit the strongest associations with practical ability dimensions, particularly artistic creativity ability and collaborative communication skills. There is a consistent interdependence among individual attributes, institutional conditions, and practical ability dimensions, as evidenced by the strong interrelationships and significant associations between career development skills and collaborative communication skills and school education management and social practice resources.

Objective 2. The analysis revealed that all four independent variables exerted statistically significant effects on the four dimensions of practical ability. Table 3 presents the standardized path coefficients obtained from the structural equation modeling analysis.

Table 3 SEM Path Coefficient Results

Influencing Paths	Standard Coefficient	Path	Estimate	S.E.	C.R.	p-value
Student personality traits → Artistic creation ability	0.155		0.171	0.069	2.470	0.014
Student personality traits → Professional practical skills	0.144		0.162	0.071	2.274	0.023
Student personality traits → Collaborative communication skills	0.125		0.131	0.066	1.979	0.048
Student personality traits → Career development skills	0.290		0.327	0.069	4.727	***
Student professional qualities → Artistic creation ability	0.228		0.259	0.083	3.130	0.002
Student professional qualities → Professional practical skills	0.207		0.242	0.085	2.838	0.005
Student professional qualities → Collaborative communication skills	0.180		0.194	0.079	2.467	0.014
Student professional qualities → Career development skills	0.190		0.221	0.079	2.783	0.005
School education management → Artistic creation ability	0.224		0.238	0.078	3.062	0.002
School education management → Professional practical skills	0.290		0.317	0.082	3.878	***

Influencing Paths	Standard Coefficient	Path	Estimate	S.E.	C.R.	p-value
School education management → Collaborative communication skills	0.309		0.312	0.076	4.096	***
School education management → Career development skills	0.249		0.272	0.076	3.589	***
Social practice resources → Artistic creation ability	0.278		0.288	0.074	3.909	***
Social practice resources → Professional practical skills	0.224		0.237	0.075	3.152	0.002
Social practice resources → Collaborative communication skills	0.256		0.252	0.070	3.579	***
Social practice resources → Career development skills	0.216		0.229	0.070	3.263	0.001

Note. *** indicates $p < 0.001$.

As reported in Table 3, every hypothesized path from the four independent variables to the four dimensions of practical ability was statistically significant ($p < .05$). The strongest standardized coefficients were found for school education management predicting collaborative communication skills ($\beta = 0.309$) and professional practical skills ($\beta = 0.290$), for student personality traits predicting career development skills ($\beta = 0.290$), and for social practice resources predicting artistic creation ability ($\beta = 0.278$). These results indicate that both internal student characteristics and external institutional and social conditions contribute significantly to the development of practical ability.

Discussion

This study confirms that the development of practical skills in higher vocational art students is influenced by the interplay of internal and external elements, as delineated in the conceptual framework. Personality traits and professional competencies affect artistic creation, professional practice, collaborative communication, and career advancement, whereas educational management and social practice resources furnish the structural and experiential conditions necessary for the development and application of these abilities. Consequently, the development of practical skills arises from synergistic interactions among individual, institutional, and social dimensions rather than from disparate forces.

The significant influence of professional competences and personality traits corresponds with previous studies highlighting purposeful practice, intrinsic drive, and self-efficacy as essential elements for skill enhancement in creative domains (Ericsson et al., 1993; Amabile, 1996; Bandura, 1997). Students exhibiting heightened desire, reflective capacity, and technical proficiency consistently displayed superior practical skills, reinforcing the notion that internal readiness influences involvement with learning activities. The findings suggest that personal traits alone are inadequate for ensuring continuous growth, along with research that emphasizes the necessity of structured instructional support and explicit performance requirements (Gardner, 1983; Dweck, 2006).

School education management and social practice resources serve as interrelated external supports that enhance the influence of student-level characteristics. Curriculum coherence, instructional organization, and feedback systems are intricately linked to collaborative communication skills, embodying system-level and socially distributed learning theories (Fullan, 2007; Sawyer, 2012). Engagement in industrial initiatives and community practice enhances the amalgamation of creative, technical, and professional competencies, aligning with

contextual learning theory (Lave & Wenger, 1991). These findings bolster the conceptual framework, illustrating that successful practical skill development relies on the congruence of internal motivation, institutional structures, and genuine practice opportunities.

Knowledge from Research

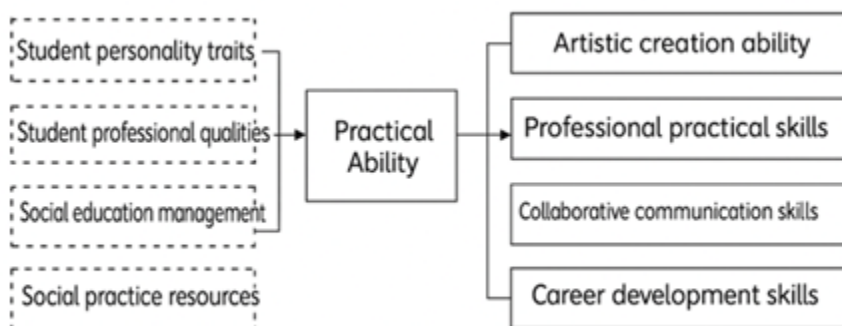


Figure 2 Knowledge from research Figure 2 illustrates the knowledge acquired from this study, encapsulating the interplay of internal and external influences in fostering practical competence across four outcome categories.

Conclusion

The study concludes that the practical competencies of higher vocational art students are influenced by four interrelated factors: student personality characteristics, professional attributes, educational management, and social practice resources. These elements influence artistic production, professional practice, collaborative communication, and career growth to varying extents. Students with superior professional preparation, elevated intrinsic drive, and enhanced access to practical experience regularly exhibit heightened levels of practical competence. The development of effective practical skills relies on the synergistic interaction of personal traits, institutional support, and external practice opportunities.

Recommendation

Suggestions for utilization of research results:

Educational administrators and instructors should strive to enhance the incorporation of practical skill development in vocational art curricula by synchronizing instructional design, assessment, and learning activities with artistic creation, professional practice, collaborative communication, and career advancement. Institutions must enhance and broaden access to social practice resources, including industry initiatives and applied learning opportunities, to facilitate the effective transfer of classroom knowledge to real-world applications.

Suggestions for future researchers:

Future research should investigate whether the identified influencing factors function similarly across various educational contexts, including other vocational fields or undergraduate art programs, and should employ longitudinal research designs to analyze the evolution of practical skills over time.

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