

THE DEVELOPMENT GUIDELINES FOR STUDENTS' LEARNING STYLES IN QUFU FAREAST VOCATIONAL AND TECHNICAL COLLEGE, CHINA*

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Abstract

The objectives of this research were: 1) to study the current situation of learning styles of students, and 2) to propose development guidelines for learning styles of students in the accounting program at Qufu Fareast Vocational and Technical College, China. The sample were 169 students' program in Accounting at Qufu Fareast Vocational and Technical College, China. Research instruments included: 1) 5-point rating scale questionnaire, and 2) structured interview. data analysis by using percentage, mean, standard deviation and content analysis.

The results were found that 1) The current situation of learning styles of students in the accounting program at Qufu Fareast Vocational and Technical College, China in five aspects was at high level. Considering in each aspect, it found that auditory was the highest level, followed by kinesthetic, cognitive, visual, and emotional was the lowest level. And 2) The development guidelines for accounting students' learning styles at Qufu Fareast Vocational and Technical

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College, China have multiple approached as follow: (1) Carry out visualized classroom teaching with flowcharts, mind maps and financial training software to materialize abstract accounting knowledge; offer accounting drawing courses, include visual tasks in assessment, build visual resource libraries and hold competitions to enhance visual learning ability. (2) Build a full-process auditory and oral expression training system via classroom interaction and audio resources; integrate oral presentations and case oral examinations into daily assessment, set up debate platforms, and optimize evaluation feedback with video review and hardware support. (3) Implement project-based and immersive practical teaching through post rotation and simulated scenarios in training rooms; establish a standardized kinesthetic training system, carry out school-enterprise cooperation and apply VR/AR equipment to strengthen hands-on and muscle memory skills. (4) Guide students to decompose complex accounting tasks and build hierarchical knowledge frameworks; teach learning strategies, set up reflection logs and learning strategy consulting centers, and adopt problem-based learning with real cases. (5) Integrate accounting industry prospects and career paths into teaching, organize enterprise visits and one-on-one tutoring; implement dual-mentor system and career planning courses to connect professional knowledge with career goals and stimulate intrinsic learning motivation.

Keywords: learning styles, Auditory, Kinesthetic, Cognitive, Emotional

Introduction

Globally, vocational education systems are addressing challenges from learner diversity. Educational research emphasizes that students have distinct learning styles such as visual, auditory, kinesthetic, reading, and writing patterns (Feld and Silverman, 1988). Teaching models ignoring these differences hinder active learning, undermining practical skills and career competitiveness (Zhang

2020). Contemporary teaching must center on student preferences, using differentiated designs, student-led choices and collaboration to cultivate metacognitive and self-directed learning abilities, aligning with lifelong learning competencies (Bhardwaj et al., 2025). China has the world’s largest vocational education system. As of September 2025, it has 10,951 institutions with 34 million students (Government of China Website, 2025). The 2022 “Opinions on Deepening the Reform of the Modern Vocational Education System” propose building an industry-education ecosystem, municipal alliances and integration communities to enhance talent cultivation quality (Ministry of Education, 2022). Shandong, a major vocational education province, has 12 provincial demonstration bases and 26 city alliances (2 national-level) (Shandong Provincial Department of Education, 2024). Its economic adaptability highlights the need to focus on learning styles. Thus, researching learning style-based guidelines at Qufu Fareast Vocational and Technical College, China With a particular focus on the accounting program, is valuable, offering insights into translating national/provincial policies into institutional teaching strategies.

In summary, the college’s guidelines are a proactive measure aligned with vocational education development. They provide a structured pathway to integrate learning style diversity into accounting and other courses, optimizing curriculum design for student needs. Guided by educational research principles and modern vocational education demands, the guidelines offer practical teaching references, enhance accounting teachers’ professional capacity, address faculty development gaps, and improve teaching/learning quality. They fill research gaps, set a peer benchmark, and cultivate accounting graduates with solid skills, strong adaptability and self-awareness, laying a foundation for their financial and economic career development.

Objectives

1. To study the current situation of learning styles of students in the accounting program at Qufu Fareast Vocational and Technical College, China.
2. To propose development guidelines for learning styles of students in the accounting program at Qufu Fareast Vocational and Technical College, China.

Literature Review

Theories of learning styles: (1) Kolb (1984) proposed the experiential learning theory, which constructs a four-stage learning cycle (concrete experience, reflective observation, abstract conceptualization, active experimentation) and categorizes learners into diverging, assimilating, converging, and accommodating styles based on their preferred learning stages. (2) Felder & Silverman (1988) proposed the Felder-Silverman learning style model for engineering education, which defines four bipolar dimensions (sensing/intuitive, visual/verbal, active/reflective, sequential/global) to characterize how learners perceive, process, and understand information in STEM disciplines. (3) Fleming (1987) proposed the VARK model, which focuses on sensory preferences for information intake and classifies learners into visual, aural, read/write, and kinesthetic types, providing a simple and practical tool for educational design and self-regulated learning. (4) Tan (1995) proposed the localized learning style theory for Chinese learners, defining learning style as a stable individual learning approach consisting of strategies and tendencies, and constructing a three-dimensional framework (physiological, psychological, social) with targeted teaching strategies for Chinese educational contexts.

Policy of learning styles: (1) The Outline of the Plan for Building China into an Education Powerhouse (2024–2035) (2025) proposes establishing a learner-centered orientation for educational development, emphasizing the

need to “actively adapt to changes in learning methods.” It calls for vigorously advancing educational digitization, exploring effective pathways for large-scale personalized instruction and human-machine collaborative teaching, and advocating teaching methods such as heuristic, inquiry-based, participatory, and collaborative approaches to meet students' diverse learning needs. (2) The Opinions on Promoting High-Quality Development of Modern Vocational Education (2021) state that project-based learning, scenario-based teaching, and modular instruction should be widely implemented to deepen the integration of modern information technology with education and teaching. Flexible learning and credit-based management systems should be fully implemented to support students' active participation in social practice, innovation and entrepreneurship, and competitive activities. Innovative teaching models and methods should be adopted to enhance classroom teaching quality and meet the diverse learning needs of students.

Component of learning styles:

Albadi (2020, p.88) proposed that the components of learning styles consisted of six aspects: 1) Cognitive, 2) Emotional, 3) Visual, 4) Auditory, 5) Kinesthetic, and 6) Environmental adaptability.

Hardiningsih (2024, p.2812) proposed that the components of learning styles consisted of eight aspects: 1) Visual, 2) Auditory, 3) Tactile, 4) Kinesthetic, 5) Reading/Writing, 6) Cognitive, 7) Social preferences, and 8) Emotional factors.

Chen (2024, p.20) proposed that the component of learning styles consisted of five aspects: 1) Visual, 2) Auditory, 3) Kinesthetic, 4) Cognitive, and 5) Society.

Researchers analyzed and synthesized literature, concepts, theories, and studies related to learning styles. Based on frequency analysis, concluded that learning styles can be categorized into five dimensions: 1) Visual, 2) Auditory, 3) Kinesthetic, 4) Cognitive, and 5) Emotional.

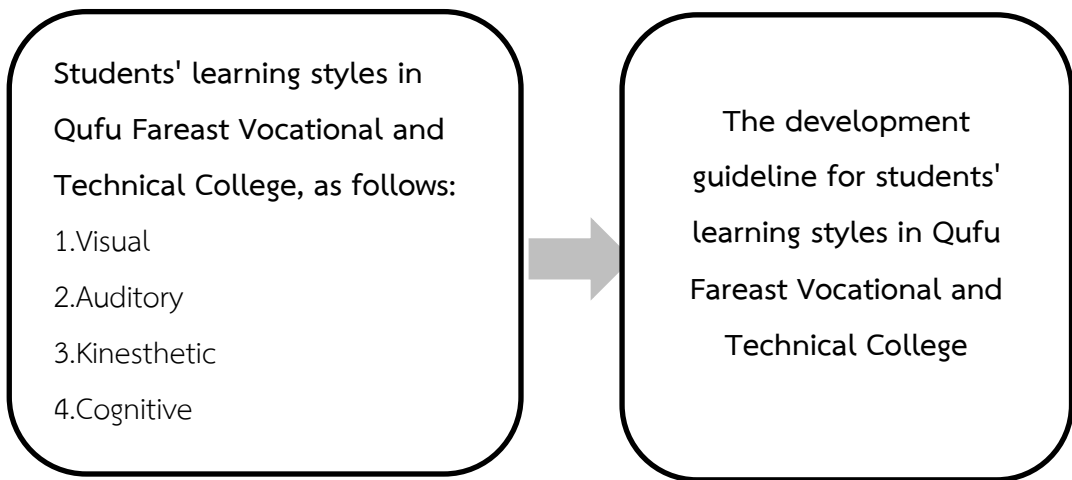


Figure 1 Research Framework

Methodology

Population and Sample group: The research population was 294 students' program in Accounting at Qufu Fareast Vocational and Technical College, China. The sample group of this research consisted of 169 students in the accounting program at Qufu Fareast Vocational and Technical College, China. The sample size was determined using the Krejcie and Morgan table (1970) and selected by simple random sampling. Students were assigned sequential numbers from 1 to 294. Using a random number table, 169 corresponding numbers were randomly selected. Students whose numbers matched these were selected as research participants.

Research Instruments: Comprising both a questionnaire and interviews.

Questionnaire: The questionnaire consists of two parts: Part One surveys respondents' personal information, categorized by gender and grade level. Part Two assesses the current learning styles of students at Qufu Fareast Vocational and Technical College, China using a 5-point Likert scale. The questionnaire encompasses five dimensions: (1) visual, (2) auditory, (3) kinesthetic, (4) cognitive, and (5) emotional. To ensure quality, three experts reviewed the

questionnaire's Inter-Rater Consistency (IOC) index. Items with IOC scores between 0.67 and 1.00 were selected. Following pilot testing, the questionnaire demonstrated a reliability coefficient of 0.956.

Interviews: In this research were 5 teachers and administrators in Qufu Fareast Vocational and Technical College, China. By purposive random sampling to provide development guidelines for students' learning styles. The interviewee at least five years of teaching or instructional experience at the vocational college, hold a professional title at the Intermediate level or higher, and have attained a bachelor's degree or higher in their field of study.

Data Collection

Questionnaire: The researcher distributed the questionnaire to 169 students in Qufu Fareast Vocational and Technical College, China. And a total of 169 questionnaires was received, accounting for 100 percent.

Interviews: To develop targeted learning style development guidelines for the college, China. The researcher arranged appointments and conducted one-on-one expert interviews with five professionals based on their availability.

Data Analysis

Questionnaire: The researcher analyzes respondents' personal information classified by gender and grade through frequency and percentage, and the current situation of students' five learning style aspects Visual, Auditory, Kinesthetic, Cognitive, and Emotional, through mean and standard deviation. The data interpretation for average value is based on Rensis Likert (1932). The data interpretation is as follows: 4.50-5.00 refers to the highest level, 3.50-4.49 refers to high level, 2.50-3.49 refers to medium level, 1.50-2.49 refers to low level, and 1.00-1.49 refers to the lowest level.

Interviews: The structured interviews conducted to explore the development guidelines for students' learning styles at Qufu Fareast Vocational and Technical College, China were analyzed using content analysis.

Results

Objective 1: To study the current situation of learning styles of students in the accounting program at Qufu Fareast Vocational and Technical College, China.

Table 1 Mean and standard deviation of learning styles of students in the accounting program in five aspects (n=169)

learning styles of students	\bar{X}	S.D.	Level	Ranking
1 Visual	3.66	0.95	high	4
2 Auditory	3.84	0.95	high	1
3 Kinesthetic	3.80	0.94	high	2
4 Cognitive	3.72	1.00	high	3
5 Emotional	3.56	0.95	high	5
Total	3.72	0.96	high	

According to table 1, found that learning styles of students in the accounting program in five aspects was at a high level ($\bar{X}=3.72$, S.D.=0.96). Considering the results from the highest to the lowest mean were as follows: the highest mean was auditory ($\bar{X}=3.84$, S.D.=0.95), followed by kinesthetic ($\bar{X}=3.80$, S.D.=0.94), and cognitive ($\bar{X}=3.72$, S.D.=0.77), respectively, and emotional was the lowest mean ($\bar{X}=3.56$, S.D.=0.95)

Objective 2: To propose development guidelines for learning styles of students in the accounting program at Qufu Fareast Vocational and Technical College, China.

Development guidelines for learning styles of students in the accounting program at Qufu Fareast Vocational and Technical College, China consisted of 5 guidelines, 28 measures. the researcher has analyzed the content as follows: (1) Teachers should use visual tools such as flowcharts and mind maps, leverage

financial training software to enhance students' practical visualization abilities, offer standardized accounting diagram courses, and include diagram creation in formative assessments with feedback. They should also provide illustrated manuals, templates and a visual resource library, and organize related competitions to stimulate enthusiasm. (2) Teachers need to establish a comprehensive auditory and oral training system, optimize classroom explanations, interactions and discussions, and create platforms like "junior teacher" roles and debates. Oral presentations and case exams should be integrated into daily assessments with peer evaluation, and video recording should be used for feedback. (3) Teachers should implement project-based teaching with lab simulations, job rotation and role-play, establish a kinesthetic gesture training system and posture memory exercises. They can use cash-counting competitions, sandbox simulations and VR/AR training to enhance practice, cooperate with enterprises on real tasks, and optimize lab environments, incorporating kinesthetic teaching into high-quality classroom evaluations. (4) Teachers should break down complex accounting transactions to build a tiered knowledge framework, teach scientific strategies like comparison and induction, and guide students to keep reflection journals and conduct error analysis. They should provide study method courses and guides, establish exchange platforms and consultation centers, and integrate strategy application into formative assessments to improve cross-course adaptability. (5) Teachers should integrate industry outlooks, career pathways and ethics into teaching, using lectures, company visits and alumni sharing to anchor professional goals. They should monitor students' learning emotions, design tiered tasks and competitions, implement a dual-mentor system and career planning courses, and use industry cases to strengthen professional identity and intrinsic learning motivation.

Discussion

The researcher summarizes the discussion into two parts as follows:

Objective 1: To study the current situation of learning styles of students in the accounting program at Qufu Fareast Vocational and Technical College, China.

Results indicated that students in the accounting program achieved high levels across all five learning style dimensions, with mean scores ranked from highest to lowest: auditory, kinesthetic, cognitive, visual, and emotional. This pattern aligns with the practical, application-oriented nature of vocational accounting education. While professional knowledge and skills are strongly emphasized, students' emotional connection to academic and career development, as well as personalized emotional regulation, still require improvement. Students excelled in narrative auditory input (understanding and recalling stories via oral narration) and structured one-way instruction, but struggled with understanding concepts through open discussion. These findings are supported by Al-Seghayer (2021), who noted superior comprehension and memory for narrative oral input among auditory learners; Erdem & Kaf (2023), who showed that auditory learners perform best in teacher-led verbal instruction but are distracted by fragmented discussion stimuli. Kinesthetic learners showed core strengths in contextualized hands-on practice, self-practice, and role-play/simulation, but were weak in mechanical gestural memory. Wang (2021) confirmed that kinesthetic learners achieve highest in situational practical training. Ogunrinbokun et al. (2025) further explained that decontextualized mechanical repetition lacks embodied meaning and results in poor retention, especially for vocational accounting students. Students demonstrated strong top-down structured thinking, including grasping overall frameworks and decomposing complex problems step by step, and could evaluate information reliability and use reasoning skills. However, they lacked flexibility in adapting

learning strategies across courses. Doimer (2022) identified “cognitive strategy rigidity” among Z-generation learners, explaining their difficulty adjusting to diverse learning scenarios. Visual learners performed well in passive reception and memory of ready-made visual materials (charts, diagrams), but were weak in active visual-spatial construction (e.g., drawing sketches). Chen (2024) confirmed that weak active visual construction is a cross-culturally universal limitation of visual learners. Students showed strong immediate achievement feedback and emotional resilience, but struggled to connect subject content to personal long-term goals to sustain interest. Wani Jailani et al. (2023) consistently demonstrated that emotional learners prioritize immediate emotional rewards over long-term goal relevance, a pattern observed across disciplines and cultures.

Objective 2: To propose development guidelines for learning styles of students in the accounting program at Qufu Fareast Vocational and Technical College, China.

The development guidelines for accounting students’ learning styles at Qufu Fareast Vocational and Technical College, China have multiple approached as follow: 1) Carry out visualized classroom teaching with flowcharts, mind maps and financial training software to materialize abstract accounting knowledge; offer accounting drawing courses, include visual tasks in assessment, build visual resource libraries and hold competitions to enhance visual learning ability. 2) Build a full-process auditory and oral expression training system via classroom interaction and audio resources; integrate oral presentations and case oral examinations into daily assessment, set up debate platforms, and optimize evaluation feedback with video review and hardware support. 3) Implement project-based and immersive practical teaching through post rotation and simulated scenarios in training rooms; establish a standardized kinesthetic training system, carry out school-enterprise cooperation and apply VR/AR

equipment to strengthen hands-on and muscle memory skills. 4) Guide students to decompose complex accounting tasks and build hierarchical knowledge frameworks; teach learning strategies, set up reflection logs and learning strategy consulting centers, and adopt problem-based learning with real cases. 5) Integrate accounting industry prospects and career paths into teaching, organize enterprise visits and one-on-one tutoring; implement dual-mentor system and career planning courses to connect professional knowledge with career goals and stimulate intrinsic learning motivation. These guidelines are supported by empirical literature: Albadi (2020) noted that visual tools like charts and mind maps are key to cultivating Generation Z students' visual learning style, and combining visual teaching with practical operation helps them better understand abstract professional knowledge. Erdem & Kaf (2023) proposed that vocational education should adopt targeted strategies for different learning styles, with project-based teaching and school-enterprise cooperation significantly improving students' kinesthetic and cognitive abilities, which correlates positively with professional academic performance. Wani Jailani et al. (2023) confirmed via VARK surveys that vocational students need a multi-dimensional training system integrating classroom training, practical assessment and hardware support to enhance auditory, visual and kinesthetic learning. Ogunrinbokun et al. (2025) found accounting students' learning style cultivation should align with professional characteristics, as linking disciplinary knowledge to career goals boosts motivation and professional identification. Doimer (2022) highlighted that diversified practical platforms and positive incentives are core to stimulating vocational students' participation, supporting oral expression platforms and emotional learning cultivation.

Recommendation

For college: Set up special research projects on learning style cultivation, and promote the curriculum reform of accounting major to adapt teaching methods to students' diverse learning styles. Build an inter-school sharing platform for accounting professional teaching resources, and exchange experience of learning style cultivation with other vocational colleges.

For administrators: Formulate a multi-dimensional evaluation system for learning style cultivation, and incorporate visual application, oral expression and practical operation into the assessment of core courses. Coordinate the training of teachers' multi-modal teaching abilities, and promote the application of digital teaching tools in accounting teaching to make up for the weak learning styles of students.

For Teachers: Design hierarchical learning tasks based on accounting professional characteristics, and formulate personalized learning guidelines for students with different learning style characteristics. Combine accounting practical cases to carry out immersive teaching, and exercise students' multi-dimensional learning abilities in real professional scenarios.

For Students: Establish a personal learning style growth file, and regularly review and adjust personal learning methods and improvement plans for weak learning styles. Take the initiative to participate in interdisciplinary learning and school-enterprise practical projects, and practice the application ability of weak learning styles in diverse scenarios.

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