DEVELOPING TAX PROFESSIONAL SKILLS USING CASE-BASED LEARNING FOR THE SECOND-YEAR VOCATIONAL STUDENTS*

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Abstract

In vocational tax education in Guangxi, China, a gap persists between theoretical instruction and the practical competencies required in real-world taxation. This study was intended to examine how effective Case-Based Learning is in enhancing tax skills among second-year vocational students. The objectives of this study were to: 1) compare students' tax professional skills before and after learning through the traditional teaching method; 2) compare students' tax professional skills before and after learning through Case-based learning (CBL); and 3) compare students' tax professional skills between those taught through the traditional teaching method and Case-based learning. The study adopted a quasi-experimental pretest-posttest control group design in which 77 accounting students were selected as subjects using cluster sampling. The research instruments included the CBL lesson plans, traditional teaching lesson plans, and a tax professional skills assessment. Data were analyzed using descriptive statistics, paired samples t-tests and independent samples t-tests. The research

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revealed that the application of both traditional approaches and CBL resulted in significant improvements in the tax professional skills of the students ($p < .05$). In addition, students in the CBL group achieved significantly higher post-test scores than those in the traditional teaching group at a statistical significance of .05. It can be said that CBL grounded in real work situations is more effective than traditional instruction in developing integrated tax professional skills among vocational students in the context of real work scenarios.

Keywords: Case-based learning, tax professional skills, vocational students

Introduction

The development of professional competence has become a core goal in vocational education, especially in skill-based subjects like taxation. There is a gap between the theory taught and the skills required in the real world of taxation in Chinese vocational colleges, as well as more specifically in Guangxi. Students can recall the regulations of taxation and perform calculations, but they experience difficulties in applying the theories to real-life professional practice. This gap can be attributed to the limitations of the conventional method of teaching, which emphasizes the transfer of information but fails to cultivate critical thinking skills (Schwerdt & Wuppermann, 2011).

Considering the practice-orientation of taxation, it is evident that there is a pressing need to develop more effective learning strategies to bridge theory and practice. The Constructivist Theory emphasizes learning in context, and Case-Based Learning (CBL) allows learners to interact with realistic case studies and develop their own understanding (Herreid, 1994). Past studies have suggested that CBL can develop critical thinking skills and learning applications compared to traditional learning strategies (Thistlethwaite et al., 2012; Misra & Anggraeni, 2022). However, little is known about the efficacy of CBL in developing professional competence in vocational tax learning in China. Therefore, this study

aims to examine the impact of CBL on students' professional competence in taxation.

Objectives

1. To compare students' tax professional skills before and after learning through the traditional teaching method.

2. To compare students' tax professional skills before and after learning through Case-based learning.

3. To compare students' tax professional skills between the group learning through the traditional teaching method and the group learning through Case-based learning.

Literature Review

Case-Based learning (CBL) has emerged as a widely accepted student-centered instructional approach that bridges the gap between theory and practice. Existing literature has proven that Case-Based learning actively promotes the development of cognitive skills by situating the learning process within realistic profession-oriented contexts. In these contexts, students are consistently encouraged to take an active part in the decision-making process, which enhances their analytical thinking and problem-solving skills (Xiang et al., 2025; Zhao et al., 2020). In the context of vocational education, CBL has proven to not only increase student engagement but also facilitate the development of professional skills by simulating realistic scenarios (Li & Zhang, 2020).

In the field of Tax Education, Case-Based Learning can be seen to be particularly relevant, especially when considering the applied and complex nature of tax legislation. Previous studies have identified the effectiveness of case-based learning strategies in enabling students to understand complex tax legislation by linking theory to practice (Li, 2010). Furthermore, other studies have

identified the value of working with external industry stakeholders within a case-based approach to enhance students' technical and employability skills (Twyford & Dean, 2021). However, despite the effectiveness of this approach, traditional lecture-based models continue to dominate the field of vocational tax education.

Methodology

Research Design

The study used a quasi-experimental research design with a pretest and posttest, along with a control group. The design allowed for comparison of students' learning outcomes before and after instruction, both within and between groups. The independent variable was the instructional approach which included the traditional approach and Case-based learning. The dependent variable was students' tax professional skills.

Participants

The participants of this study consisted of a total of 77 second-year vocational students of a public college in China during the 2025 academic year. The intact class grouping sampling technique was used. The students were divided into two groups: one class of 40 students formed the experimental group and learned through Case-based learning. The other class of 37 students formed the control group and learned through the traditional approach.

Research Instrument

The research instruments consisted of the traditional teaching method lesson plans, the CBL lesson plans and tax professional skills rubric scoring. The seven separate taxation learning modules were designed for both traditional teaching method and Case-based learning. Each plan of traditional teaching method followed a 5-step traditional teaching sequence: 1) Presentation of New Material, 2) Modeling and Explanation, 3) Guided Practice, 4) Independent

Practice, 5) Assessment and Feedback, while the seven lesson plans based on Case-based learning consisted of: 1) Case Introduction, 2) Problem Identification, 3) Information collection and analysis, 4) Solution Development, 5) Presentation and Discussion of finding, and 6) Reflection and Transfer. For validation, the lesson plans were examined by the experts. Content validity was evaluated using the Index of Item- Congruence (IOC). The overall IOC value for the entire set of both traditional teaching lesson plans and CBL lesson plans was 1.00, which indicated the high content validity. The tax professional skills assessment was a five-point Likert scale rubric scoring , ranging from outstanding to unsatisfactory. The rubric consists of five attributes: Regulatory interpretation and compliance capability; Strategic planning and tax structuring; Technical application and data analytics proficiency; Communication, collaboration, and ethical judgment; Risk management and practical operational skills. The rubric's content validity was used the IOC method and the overall IOC value equal 1.00, indicating a highly consistent evaluation and recognition of the content validity of the assessment tool, affirming its effectiveness and comprehensiveness in reflecting students' tax profession skill levels.

Data Collection

Prior to the start of the intervention program, pre-test cases were administered to all participants to measure the participants' level of professional skills in taxation. Then the experimental group was exposed to the intervention through the application of the Case-Based Learning (CBL) approach, focusing on real-life cases of taxation, while the control group was exposed to the conventional lecture method. The instruction was longitudinal, covering an entire semester. To ensure comparability, the same teacher taught both groups, with the same content and the same amount of time, thus eliminating any possible teacher bias. After completion of all instructional content for the semester, both groups were given a post-test under the same testing conditions. Before the

research was conducted, the researchers received ethical clearance and consent from all the participants.

Data Analysis

The data was analyzed using paired samples t-tests to examine the differences within the groups over time, and independent samples t-tests to examine the differences between the groups. The significance level was set at 0.05.

Results

This study aims to compare the tax professional skills by examining the differences before and after learning, and between the two learning approaches: traditional teaching method and Case-based Learning of the second-year vocational students. However, prior to the analysis of the data using the t-test, the study established the normality of the data and the equality of the variances of the data. Based on the inspection of the data, the study found that the data were normally distributed. In addition, the results of Levene's test showed that the data had homogeneous variances since the p-value was > 0.05. The research results correspond to three research objectives, which are presented as follows:

Table 1 Comparison of the students' tax professional skills before and after learning through the traditional teaching method

The learning through traditional method	Number of Units (n)	Mean $\overline{x}$	Standard Deviation (s)	Computed t-value (t)	Degrees of Freedom (df)	Sig. (p-value)
Before	37	9.32	1.86	10.91*	36	0.000
After	37	14.05	1.77			

* p <0.05

As presented in Table 1, the results revealed that the group that was given traditional instruction exhibited an increase in the average score.The post test score in the control group ($\overline{\mathbf{X}}$=14.05, SD=1.77) showed a significant improvement compared to the pre-test score ($\overline{\mathbf{X}}$=9.32, SD=1.86). The results indicate that students'tax professional skills after learning through the traditional lecture-based teaching were higher than before learning at a statistical significance of .05.

Table 2 Comparison of the students' tax professional skills before and after learning through Case-based learning

The learning through CBL	Number of Units (n)	Mean ($\overline{x}$)	Standard Deviation (s)	Computed t-value (t)	Degrees of Freedom (df)	Sig. (p-value)
Before	40	9.5	1.88	16.34*	39	0.000
After	40	16.85	1.71			

* p <0.05

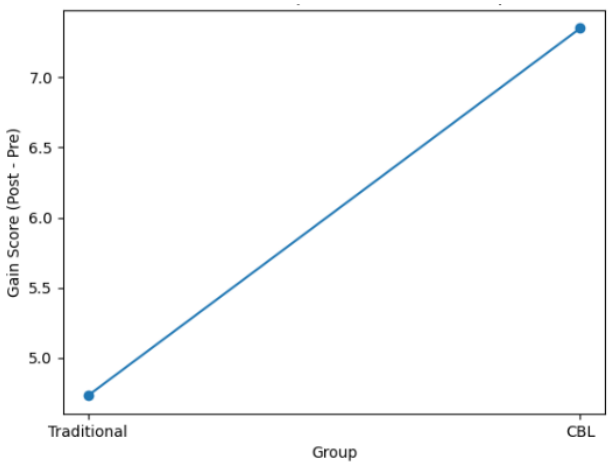
Likewise, as shown in Table 2, a dramatic increase was noted in the scores of the Case-based learning group, the post test score of tax professional skills after receiving Case-based learning ($\overline{\mathbf{X}}$=16.85, SD=1.71) showed a significant improvement compared to the pre-test score ($\overline{\mathbf{X}}$=9.50, SD=1.88). The results indicate that the tax professional skills after learning through Case-based learning were higher than before learning at a statistical significance of .05.

Table 3 Comparison of the students' tax professional skills between learning through the traditional teaching method and Case-based learning

Learning Management	Number of Units (n)	Mean ($\bar{x}$)	Standard Deviation (s)	Computed t-value (t)	Degrees of Freedom (df)	Sig. (p-value)
The traditional teaching	37	14.05	1.77	9.96*	75	0.000
Case-based learning	40	16.85	1.71			

Based on table 3, the post test scores of the experimental group ($\bar{X}$=16.85, SD=1.71) were significantly higher than those of the control group ($\bar{X}$=14.05, SD=1.77), The results indicate that the Case-based learning has a significantly better effect on cultivating students' tax professional skills than traditional teaching at a statistical significance of .05, confirming the superiority of Case-based learning.

Figure 1 Comparison of Gain Scores Between Traditional Teaching and Case-Based Learning



In addition, a comparison of gain scores (post-test minus pre-test) between the two groups in Figure 1 further illustrated the greater improvement observed in the CBL group.

Discussion

The results of the study in relation to the first research objective reveal that the conventional teaching methods resulted in the development of the students'tax professional skills. This is due to the understanding of the conventional teaching methods in the lecture format, in which the conventional teaching methods facilitate the students in attaining conceptual understanding and executing the concepts (Schwerdt & Wuppermann, 2011; Rosenshine, 2012). These results show that traditional learning methods are still effective in developing basic knowledge.

The results obtained in relation to the second research objective reveal that there is an increased improvement in tax professional skills due to Case-Based Learning. This is because CBL is an example of contextual learning in which students actively engage in tax-related situations. Through such active engagement in learning, students improve their knowledge construction skills as well as critical thinking skills (Abdel-Wahed et al., 2024; Chen, et al., 2025). Such an approach is in line with the situated learning theory, which highlights the importance of learning in real-world contexts (Obeagu & Muhammad, 2025).

Regarding the third research objective, the findings also give further evidence of the superiority of the Case-Based Learning (CBL) approach over the traditional learning approaches. Research literature consistently reveals that Case-based learning enhances critical thinking and problem-solving skills better than traditional lecture-based instruction (Thistlethwaite et al., 2012; Cen et al., 2021). Furthermore, discussion and reflection of different options encourage the student to scrutinize the processes of thinking and decision-making, which

enhances the development of professional judgment skills (Bonney, 2015). Summing up, the traditional learning approaches are good enough for supporting the development of basic knowledge, while the CBL approach is better suited for the development of integrated professional competence.

Recommendation

In view of this, it is recommended that vocational colleges consider incorporating Case-Based Learning (CBL) into taxation subjects. For this purpose, faculty development programs for educators teaching taxation subjects can be conducted. The programs will enable educators to prepare realistic case scenarios and promote learner-centeredness among students. In this regard, Case-Based Learning (CBL) can be incorporated into taxation subjects by allocating a portion of the assessment for case studies and participation. The actual tax documents and technology should be used to further reinforce understanding. In addition to that, the strategies should be tailored to suit the needs of learners who have varying degrees of competency.

As for future research, the impact of Case-Based Learning (CBL) should be explored. In addition, future research should also examine how Case-Based Learning (CBL) can be incorporated into a technology-enhanced learning approach.

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