INTERNATIONAL JOURNAL OF ACADEMIC RESEARCH IN BUSINESS & SOCIAL SCIENCES

Vol 15, Issue 4, (2025) E-ISSN: 2222-6990

Using Scaffolded Instruction to Enhance Autonomous Learning Ability: A Case among EFL learners in a Chinese Vocational and Technical College

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To Link this Article: http://dx.doi.org/10.6007/IJARBSS/v15-i4/25193 DOI:10.6007/IJARBSS/v15-i4/25193

Published Date: 17 April 2025

Abstract

This study examined the impact of scaffolded instruction on the autonomous learning abilities of EFL learners in a Chinese vocational and technical college. Sophomore EFL students were randomly assigned to an experimental group (n = 52) receiving scaffolded instruction or a control group (n = 50) following traditional methods. Pre-experimental comparisons revealed no significant differences between the groups. Data were collected through questionnaires administered before and after the intervention and analyzed using independent samples t-tests, descriptive statistics, and one-way MANOVA. Findings indicate that scaffolded instruction more effectively enhances autonomous learning, with improvements across all five dimensions, most notably in learning strategy use, compared to traditional instruction. These results underscore the value of scaffolded approaches in fostering learner autonomy. Implications for EFL educators include incorporating scaffolds that support goal setting, strategic planning, and self-monitoring to tailor instruction to students' individual needs. This study contributes empirical evidence to the limited literature on scaffolded instruction in the context of Chinese vocational and technical colleges.

Keywords: Learner Autonomy, EFL Learners, Scaffolded Instruction, Chinese Vocational And Technical Colleges

Introduction

Vocational and technical college EFL learners in China face unique challenges in their language acquisition process (Chen et al. 2021). In China's exam-oriented education system, rote memorization and standardized assessments have traditionally taken precedence over learner autonomy, limiting these students' ability to develop independent learning skills (Lu et al. 2007). Compared to undergraduates, Chinese EFL learners in vocational and technical colleges find it challenging to escape the confines of mechanical learning under this system,

and they are unable to cultivate their creativity and autonomous thought processes, resulting in poor language learning outcomes (Kirkpatrick and Zang 2011). Furthermore, Chinese EFL learners in vocational and technical colleges often struggle when they face more demanding language programs after entering college because they have not been able to build a solid language foundation in primary and secondary schools (Sun 2020). Without effective autonomous learning strategies, they struggle to cope with the demands of college-level language programs (Chen et al. 2021). Regarding this group, more study and attention are needed to understand their requirements and challenges better to provide them with tailored instruction and support systems.

Scaffolded instruction is an integral part of language teaching methodology (Walqui 2006), helping learners improve their language abilities in a supportive and interactive learning environment. Vygotsky states that scaffolding refers to temporary instructional support provided by a more knowledgeable individual (e.g., a teacher or peer) to help learners bridge the gap between their current abilities and their potential development within the Zone of Proximal Development (ZPD) (Wood et al. 1976). Teachers who make good use of scaffolds including models, notes, references, videos, etc., can facilitate EFL students' English learning (Liu et al. 2022). To date, the effectiveness of scaffolded instruction in fostering learner autonomy has been widely recognized in different contexts, especially in foreign language learning. Scaffolded learning promotes language learning for EFL learners and also has a significant impact on learner autonomy (Meri-Yilan 2019). With the help of scaffolds, learners receive support during the transition from external regulation to self-regulation (Li 2017). Therefore, teachers can use scaffolds as an instructional strategy to demonstrate necessary learning strategies or activities throughout the entire class. During this process, teachers should train students to understand the relevant material at a certain level or stage of comprehension, and then gradually transfer the task of mastering concepts to the students (Vacca 2008). In fact, teachers play a crucial role in helping students gain learning autonomy by promoting learner engagement by involving them in the definition of learning objectives, content, activities, and technologies. By supporting students' self-monitoring and self-assessment, teachers can encourage learner reflection. Additionally, providing scaffolds for students immersed in authentic learning environments can effectively foster learner autonomy (Ribbe and Bezanilla 2013). Besides, Liu conducted a study on Chinese high school students and designed a scaffolded instruction model aimed at enhancing their autonomous learning abilities (Liu 2021). Through experiments, he found that using scaffolded instruction in information and technology teaching can significantly improve students' autonomous learning abilities. The students showed particularly notable improvements in four key areas: learning motivation, learning strategies, learning outcomes, and learning environment. Moreover, the impact of scaffolded instruction on learning effectiveness was also significant. Using scaffolded instructions, particularly in an EFL context, students' foreign language abilities are developed with their autonomy being promoted.

Given the unique learning conditions and limited support systems available to vocational college students, especially in developing autonomous learning capacities, there is an urgent need to investigate instructional strategies that can actively address these challenges. While traditional teaching methods sometimes neglect the cultivation of learner autonomy, scaffolded instruction offers a promising alternative that aligns well with the needs of vocational EFL learners. This instructional approach not only accommodates their current

academic abilities but also encourages progressive development toward independent learning. However, despite the widespread attention on the role of scaffolded instruction in fostering learner autonomy among EFL students, the group of vocational and technical college EFL learners is overlooked to a certain extent. Currently, relevant research in China predominantly focuses on undergraduates and primary and secondary school students. Due to differences in language proficiency, learning environments, and learning abilities, these research findings are not well-suited to addressing the challenges faced by vocational and technical college EFL learners in their autonomous learning processes. This study aims to explore the role of scaffolds in developing EFL learners' autonomous learning abilities based on an analysis of the changes in their autonomous learning abilities before and after receiving scaffolded instruction in Chinese vocational and technical colleges.

To achieve the goals, the two research questions addressed in the current study are:

1. What are the differences in the performance of EFL learners in Chinese vocational and technical colleges in the five aspects of autonomous learning ability after receiving scaffolded instruction?
2. What are the differences in the EFL learners' improvement in the five demission of autonomous learning after receiving the scaffolded instruction?

Research Methodology

This quantitative study was conducted through a questionnaire to gain insight into the three null hypotheses: (1) there is no significant effect of scaffolded instruction on the autonomous learning ability of EFL learners in Chinese vocational and technical colleges. (2) there is no significant effect of scaffolded instruction on the five dimensions (setting goals, formulating plans, using learning strategies, monitoring learning strategies use, and evaluating) of learner autonomy of EFL learners in Chinese vocational and technical colleges. (3) there is no significant difference in the EFL learners' improvement in the five demission of learner autonomy after receiving the scaffolded instruction.

Participants

This study was conducted in Henan Province, China. The researcher chose college A by adopting cluster sampling from the three local public vocational and technical colleges to participate in the experiment. There are three grades of EFL learners in College A, and the researcher chose the sophomore EFL students to participate in the experiment because they have had a year of study at this college and have a certain understanding of its environment and rules, which can help minimize the interference of external factors. Additionally, unlike junior students, sophomores do not have the pressure of internships or employment, allowing them to focus more on their studies.

The experiment involved Class 1 (52 students) and Class 2 (50 students), comprising all sophomore EFL students at College A. These students were randomly assigned into two classes by the college when they were enrolled and showed no significant differences in age, gender ratio, or language proficiency. Participant demographic data is shown in Appendix A. Both classes were taught by the same teacher using the textbook "New Horizon College English (Book II)" published by Foreign Language Teaching and Research Press. Class 1 was designated as the experimental group and employed scaffolded instruction, while Class 2 was designated as the control group and employed traditional instruction.

Instrument

The quantitative data of this study were collected through a questionnaire (see Appendix B). The questionnaire used in this study was adapted from the "Autonomy Questionnaire for Non-English Majors in China" (Xu 2009) and the "College Student Learning Autonomy Scale" (Xie 2002) to better suit EFL learners in vocational and technical colleges. This questionnaire was administered before and after the experiment to assess the autonomous learning ability of participants in terms of goal setting (Questions 1-5), formulating learning plans (Questions 6-9), using learning strategies (Questions 10-11), strategy monitoring (Questions 12-15), and learning evaluation (Questions 16-25). To ensure the reliability of the questionnaire, 10 sophomore EFL students (10% of the experimental sample size) were randomly selected from another local vocational and technical college to conduct a pilot study before the experiment. The researcher used SPSS to test the results, with the reliability score exceeding the critical value of 0.70. The overall internal reliability analysis score (Cronbach's α) was 0.971, indicating that the questionnaire meets the reliability assumption. To ensure that the participants could understand the content of the questionnaire, the researcher used a Chinese version of the questionnaire.

Data Collection and Data Analysis

Before the experiment began, the researcher distributed questionnaires to the students in both experimental and control groups during class. To facilitate understanding, the questionnaires were provided in Chinese. Before filling out the questionnaires, participants were informed that their personal information would be kept confidential and that the analysis of their responses would be used solely for research purposes. During the questionnaire completion process, students were instructed not to discuss the questions with others or take photos of the questionnaire. After the one-semester experiment ended, the researcher distributed the same questionnaire to both groups again during class. In both rounds of the survey, all participants completed the questionnaires, with no missing data.

Data obtained from the questionnaires before and after the experiment were analyzed. First, the researcher used independent samples t-test and descriptive analysis in SPSS 22.0 to compare the pre-and post-experimental changes between the two groups to examine the autonomous learning ability of participants after the experiment. Subsequently, the results of the two questionnaires given to the experimental group on the five dimensions of autonomous learning (setting goals, making plans, using learning strategies, monitoring the use of learning strategies, and conducting evaluations) were analyzed and compared using independent samples t-test and descriptive analysis to ascertain the changes in the five dimensions before and after using the scaffolded instruction. Finally, the researcher compared the experimental group before and after scaffolded instruction on the five dimensions of autonomous learning using one-way MANOVA to examine if there were any differences among these dependent variables.

Results

The following part critically investigates the connections between scaffolded instruction and the autonomous learning ability of EFL learners in Chinese vocational and technical colleges.

Comparisons of the Autonomous Learning Ability of the EFL Learners in the Experimental and Control Groups before and after Instructions

Table 1 presents the descriptive statistics of the pre-test results on autonomous learning ability for EFL learners in both the experimental and control groups.

Table 1
Descriptive Analysis of Pre-test for Experimental and Control Groups

Group	N	Min	Max	Mean	SD
Experimental	52	33	90	65.673	16.878
Control	50	40	94	70.640	14.748

As shown in Table 1, the mean score for the experimental group was 65.673 (SD = 16.878), while the control group had a mean score of 70.640 (SD = 14.748) before the experiment. Overall, the mean score for the control group was 4.965 points higher than that of the experimental group. To determine if this difference was significant, the researcher conducted an independent samples t-test on the pre-experiment questionnaire data for both groups using SPSS 22.0. The results are shown in Table 2.

Table 2
Independent T-test Analysis of Pre-test for Experimental and Control Groups

Group	N	Mean	SD	t	df	Sig. (2-tailed)
Experimental	52	65.673	16.878	1.580	100	.117
Control	50	70.640	14.748			

Table 2 shows that the significance level of the pre-test scores for the two groups is 0.117, which is higher than 0.05 (0.117 > 0.05). This indicates that there is no significant difference in the mean pre-test scores for autonomous learning ability between the experimental and control groups. Table 3 presents the descriptive statistics of the post-test results on autonomous learning ability for EFL learners in both the experimental and control groups.

Table 3
Descriptive Analysis of Post-test for Experimental and Control Groups

Group	N	Min	Max	Mean	SD
Experimental	52	58	102	85.269	12.180
Control	50	44	99	75.220	13.917

Table 3 presents a descriptive analysis of the results of the post-test questionnaire on the autonomous learning performance of EFL learners in the two groups. After the intervention, the experimental group had an average score of 85.269 (SD = 12.180), while the control group had an average score of 75.220 (SD = 13.917). The mean difference between the two groups after the intervention was 10.049. To verify whether the difference was significant, the researcher conducted an independent samples t-test on the post-test questionnaire data for both groups using SPSS 22.0. The results are shown in Table 4.

Table 4
Independent T-test Analysis of Post-test for Experimental and Control Groups

Group	N	Mean	SD	t	df	Sig. (2-tailed)
Experimental	52	85.269	12.180	100	.000	
Control	50	75.220	13.917			

Table 4 shows that the significance level of the post-test questionnaire results for the experimental group and the control group is 0.000, which is lower than 0.05. This indicates

that the first null hypothesis which stated that there is no significant effect of scaffolded instruction on the autonomous learning ability of EFL learners in Chinese vocational and technical colleges is rejected. Therefore, there is a significant difference between the mean post-test scores of the two groups. It also means that EFL students who received scaffolded instruction in the classroom have a higher level of autonomous learning compared to those who did not receive scaffolded instruction.

Figure 1 visually illustrates the changes in the mean scores of the autonomous learning ability questionnaire for both groups before and after the experiment. It is evident that the experimental group showed significantly greater improvement in autonomous learning ability compared to the control group, which did not receive scaffolded instruction.

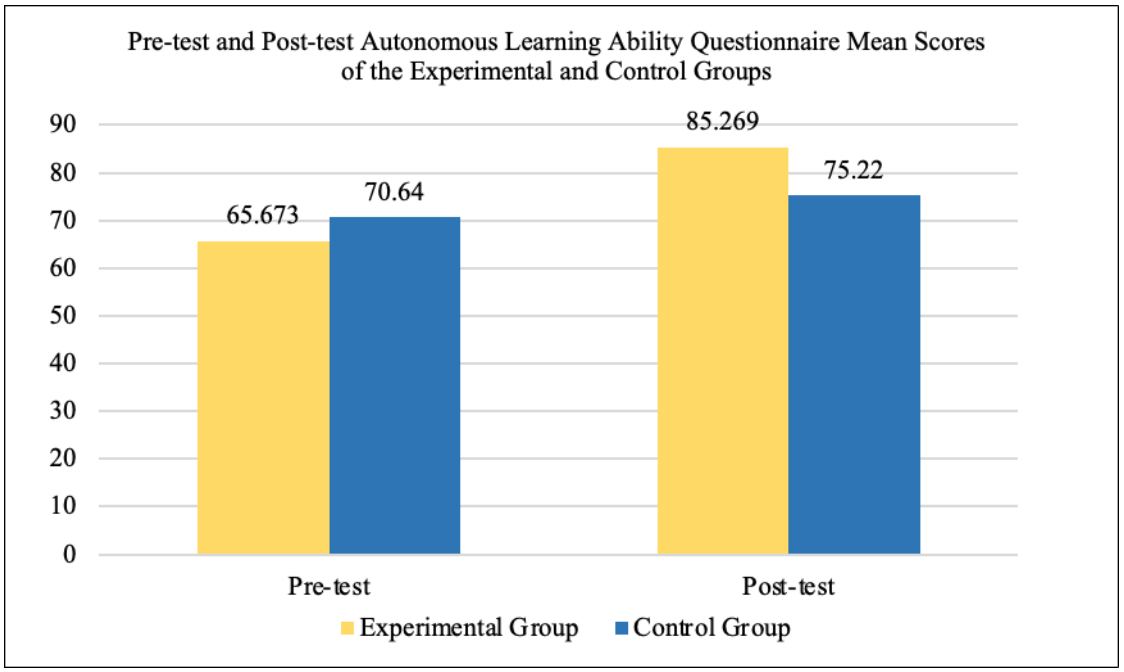

Figure 1. Pre-test and Post-test Autonomous Learning Ability Questionnaire Mean Scores of the Two Groups

Differences in the Performance of the Experimental Group in the Five Aspects of Autonomous Learning Ability Before and after Receiving the Scaffolded Instruction

In this section, the researcher used independent samples t-tests to examine whether there are significant differences in the pre-test and post-test performances of the experimental group across the five dimensions of autonomous learning. Figure 2 illustrates the pre-test and post-test results of the questionnaire on the five dimensions of autonomous learning ability among students in the experimental group. After one semester of scaffolded instruction, it is evident that the experimental class has made significant progress across all five dimensions of autonomous learning ability.

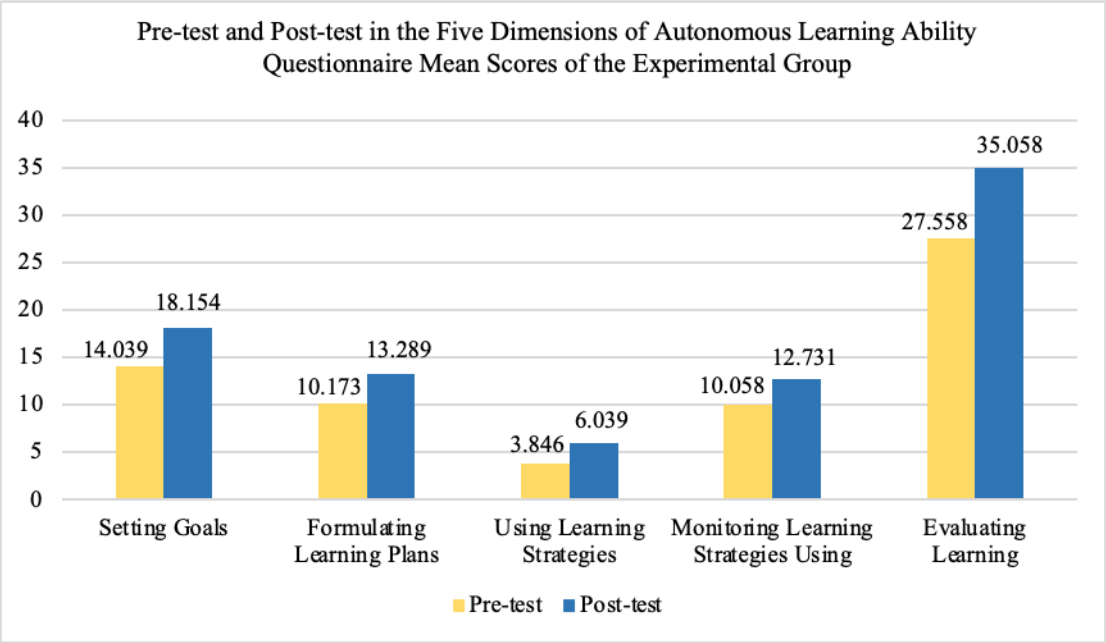

Figure 2. Pre-test and Post-test in the Five Dimensions of Autonomous Learning Ability Questionnaire Mean Scores of the Experimental Group

Setting Goals

Figure 2 presents the mean scores of the pre-test and post-test data for the experimental group's five dimensions in autonomous learning performance. As shown in Figure 2, the experimental group's mean score in goal-setting was 14.039 before the experiment and 18.154 after the experiment. The mean difference was 4.115. To verify whether this difference was significant, the researcher conducted an independent samples t-test using SPSS 22.0 on the pre-test and post-test data for the experimental group's goal-setting aspect. The results are shown in Table 5.

Table 5
Independent T-test of Pre-Test and Post-Test Performance in Setting Goals for the Experimental Group

Experimental group	N	Mean	SD	t	df	Sig. (2-tailed)
Pre-test	52	14.039	4.296	-5.603	102	.000
Post-test	52	18.154	3.096			

Table 5 shows that the p-value (.000) is less than 0.05. This indicates that there is a significant difference in the goal-setting ability of the experimental group between the pre-test and post-test. EFL students who received scaffolded instruction in the classroom exhibited a higher level of goal-setting ability compared to when they did not receive scaffolded instruction.

Formulating Learning Plans

As illustrated in Figure 2, the mean score of the experimental group in formulating study plans was 10.173 before the experiment and 13.289 after the experiment, with a mean difference of 3.116. The researcher used SPSS 22.0 to conduct an independent samples t-test on the experimental group's questionnaire data in formulating study plans aspect of pre-test and post-test in order to ascertain the significance of this difference. Table 6 presents the results.

Table 6
Independent T-test of Pre-Test and Post-Test Performance in Formulating Learning Plans for the Experimental Group

Experimental group	N	Mean	SD	t	df	Sig. (2-tailed)
Pre-test	52	10.173	2.840	-6.351	102	.000
Post-test	52	13.289	2.108			

Table 6 shows that the significance level of the mean difference in formulating learning plans between the pre-test and post-test for the experimental group is 0.000, which is lower than 0.05. This indicates that there is a significant difference in the ability to formulate learning plans of the experimental group before and after the experiment. EFL students who received scaffolded instruction in the classroom exhibited a higher level of ability to formulate learning plans compared to when they did not receive scaffolded instruction.

Using Learning Strategies

The pre-test mean score of the experimental group in using learning strategies was 3.846 and the post-test mean score in this dimension was 6.039. The mean difference was 2.193. SPSS 22.0 was conducted to make an independent samples t-test on the experimental group's questionnaire data on using learning strategies dimension of pre-test and post-test in order to verify the significance of this difference. The results are shown in Table 7.

Table 7
Independent T-test of Pre-Test and Post-Test Performance in Using Learning Strategies for the Experimental Group

Experimental group	N	Mean	SD	t	df	Sig. (2-tailed)
Pre-test	52	3.846	1.334	-8.744	102	.000
Post-test	52	6.039	1.220			

It can be seen that the p-value (.000) in Table 5 is less than 0.05, which that there is a significant difference in the using learning strategies dimension of the experimental group between the pre-test and post-test. Scaffolded instruction helps EFL learners make significant progress in the aspect of learning strategies use.

Monitoring Learning Strategies Use

The experimental group's mean score before and after the experiment for monitoring learning strategies use was 10.058 and 12.732, respectively. There was a 2.674 mean difference. To confirm the significance of this difference, an independent samples t-test was performed using SPSS 22.0 on the questionnaire data from the experimental group in monitoring learning strategies use dimension of the pre-test and post-test. Table 8 presents the findings.

Table 8
Independent T-test of Pre-Test and Post-Test Performance in Monitoring Learning Strategies Use for the Experimental Group

Experimental group	N	Mean	SD	t	df	Sig. (2-tailed)
Pre-test	52	10.058	3.478	-4.978	102	.000
Post-test	52	12.731	1.705			

Table 8 demonstrates that the experimental group's mean difference in monitoring learning strategies use between the pre-and post-tests was 0.000, lower than 0.05. This suggests that the experimental group's ability to monitor learning strategies use before and

after the experiment differs significantly. When scaffolded instruction was given to EFL students in the classroom, they demonstrated a greater ability to monitor learning strategies use than when scaffolded instruction was not given.

Evaluating Learning

The mean score of the experimental group for evaluating learning was 27.558 before the experiment and 35.058 following it, with a mean difference of 7.500, as shown in Figure 2. To determine the significance of this difference, the researcher employed SPSS 22.0 to perform an independent samples t-test on the questionnaire data from this dimension. The outcomes are shown in Table 9.

Table 9
Independent T-test of Pre-Test and Post-Test Performance in Evaluating Learning for the Experimental Group

Experimental group	N	Mean	SD	t	df	Sig. (2-tailed)
Pre-test	52	27.558	7.304	-6.029	102	.000
Post-test	52	35.058	5.207			

Table 9 shows that the p-value (.000) is less than 0.05. This implies notable differences in the experimental group's ability to evaluate learning in the pre-test and post-test. EFL students showed a higher capacity for evaluating learning when scaffolded instruction was provided in the classroom than when it was not.

The descriptive analysis and independent sample t-test results for the five dimensions of autonomous learning mentioned above confirm the rejection of the second null hypothesis, which states that "there is no significant effect of scaffolded instruction on the five dimensions of learner autonomy." In other words, scaffolded instruction significantly affects the five dimensions of autonomous learning for EFL learners in Chinese vocational and technical colleges.

Differences in the Improvement of Experimental Groups in the Five Demission of Autonomous Learning after Receiving the Scaffolded Instruction

In MANOVA the goal is to maximally discriminate between two or more distinct groups on a linear combination of quantitative variables (Grice and Iwasaki 2009). Therefore, the researcher employed a one-way MANOVA to comprehensively compare the differences in the five dimensions of autonomous learning performance (setting goals, formulating plans, using learning strategies, monitoring learning strategies use, and evaluating) of the EFL learners in the experimental group before and after the experiment. MANOVA helps the researcher gain a better and more comprehensive understanding of scaffolded instruction's effects on the autonomous learning performances of Chinese vocational and technical college EFL learners.

The researcher first conducted a descriptive analysis of the questionnaire data on the five dimensions of autonomous learning for the experimental group before and after the experiment. To eliminate potential biases caused by the varying number of questions in each dimension of the questionnaire, Table 10 presents the average differences in each dimension before and after the tests.

Table 10
Descriptive Statistics of Pre-Test and Post-Test Performance in Autonomous Learning for the Experimental Group

Dimension	N	Mean	SD
Setting goals	52	0.823	0.413
Formulating plans	52	0.779	0.504
Using learning strategies	52	1.906	0.560
Monitoring learning strategies use	52	0.668	0.732
Evaluating	52	1.906	0.560

The researchers examined the differences between pre-and post-test scores for the five dependent variables to determine whether the changes in the five dimensions of learner autonomy in the experimental group before and after the scaffolded instruction were statistically significant. The results are shown in Table 11. According to the significance level (typically 0.05), if the P-value is less than 0.05, there is a significant difference between the groups. It can be seen that the P-value is 0.000 < 0.05, indicating that there are significant differences in the changes in the five dimensions of learner autonomy in the experimental group before and after the scaffolded instruction. Therefore, the third null hypothesis "There is no significant difference in the EFL learners' improvement in the five demission of autonomous learning after receiving the scaffolded instruction" is rejected.

Table 11
MANOVA Test for Comparing the Variance of the Experimental Group Before and After the Experiment

	Sum of Squares	df	Mean Square	F	Sig.
Demission	5.503	4	1.376	6.035	.000
Inaccuracy	46.509	204	0.228		

Since the MANOVA results indicated significant differences in the five dimensions of autonomous learning performance in the experimental group before and after the scaffolded instruction, the researchers conducted an LSD post hoc test to determine these significant differences. Table 12 shows the scores change in the pre-and post-test for setting goals in the experimental group was significantly smaller than the change for using learning strategies (Mean Difference = -0.273, P = 0.005). Similarly, the scores change in the pre-and post-test for formulating plans was significantly smaller than the change for using learning strategies (Mean Difference = -0.317, P = 0.001). Additionally, the scores change for using learning strategies was significantly greater than the change for monitoring the use of learning strategies (Mean Difference = 0.428, P = 0.001) and for evaluating the learning process (Mean Difference = 0.346, P = 0.000). Besides, there were no significant differences between the other dimensions (P values all greater than 0.005).

Table 12
Multiple Comparison for Post Hoc Test

(I) Demission	(J) Demission	Mean Difference (I-J)	Std. Error	Sig.
Setting goals	Formulating plans	0.044	0.070	0.531
	Using learning strategies	0.273*	0.092	0.005
	Monitoring learning strategies use	0.155	0.198	0.122
	Evaluating	0.073	0.053	0.173
Formulating plans	Using learning strategies	-0.317*	0.091	0.001
	Monitoring learning strategies use	0.111	0.129	0.039
	Evaluating	0.029	0.061	0.639
Using learning strategies	Monitoring learning strategies use	0.428*	0.126	0.001
	Evaluating	0.346*	0.072	0.000
Monitoring learning strategies use	Evaluating	-0.082*	0.110	0.461

The in-depth analysis of the questionnaire data indicates that after a semester of scaffolded instruction, the EFL learners in the experimental group significantly improved their autonomous learning abilities, surpassing those of the control class who received traditional instruction. Additionally, in the five aspects of autonomous learning—setting goals, formulating plans, using learning strategies, monitoring the use of learning strategies, and evaluating the learning process—the EFL learners in the experimental group greatly benefited from scaffolded instruction. Notably, the progress in using learning strategies was particularly prominent.

Conclusions and Discussions

This study examined the role of scaffolded instruction in enhancing the autonomous learning abilities of EFL learners at Chinese vocational and technical colleges, as well as its impact on EFL learners' performance in five dimensions of autonomous learning. A total of 102 EFL learners from a Chinese vocational and technical college participated in the experiment. The study employed an autonomous learning ability questionnaire to quantify the participants' autonomous learning abilities. Three hypotheses were proposed to explore the effects of scaffolded instruction on the five dimensions of autonomous learning abilities (setting goals, formulating plans, using learning strategies, monitoring the use of learning strategies, and evaluating the learning process) among EFL learners. Data analysis revealed several key findings, summarised as follows.

In this study, the results of the descriptive analysis and the independent samples t-test indicate that after one semester of experimental intervention, there is a statistically significant difference in autonomous learning abilities between the experimental group, which received scaffolded instruction, and the control group, which received traditional instruction. Specifically, the autonomous learning abilities of the EFL learners in the experimental group showed a significant improvement, with their overall level being notably higher than that of the learners in the control group. Moreover, the results of the descriptive analysis and independent samples t-test both show that the autonomous learning abilities of

the experimental group significantly improved compared to their pre-test results. After a semester of scaffolded instruction, the experimental group showed progress in all five dimensions of autonomous learning: setting goals, formulating plans, using learning strategies, monitoring learning strategies use, and evaluating the learning process. The independent samples t-test results revealed a significant difference between the pre-test and post-test scores of the experimental group. Additionally, according to the results of the one-way MANOVA, the experimental group experienced varying degrees of improvement across the five dimensions of autonomous learning after scaffolded instruction, with a particularly notable enhancement in the use of learning strategies. These findings demonstrate the effectiveness of scaffolded instruction in improving the autonomous learning abilities of EFL learners in Chinese vocational and technical colleges, especially in helping learners enhance their ability to use learning strategies.

Theoretically, this study provides practical support for scaffolded instruction grounded in constructivist learning theory. It offers a concrete example of how key concepts such as the Zone of Proximal Development (ZPD) and learner-centered teaching can be effectively applied in EFL classrooms within vocational and technical colleges in China. The findings show that when scaffolded instruction is appropriately designed, it helps learners gradually take more responsibility for their learning and develop greater autonomy. By focusing on a learner group often overlooked in previous research, this study also extends the applicability of constructivist theory to more diverse educational contexts. It confirms that scaffolds not only support language learning, but also promotes metacognitive development and strategic learning, which are essential for autonomous learning. These insights contribute to the theoretical understanding of how constructivist principles can inform effective instructional practices in EFL education.

Practically, this this study provides evidence-based insights for EFL instructors. Currently, most research on classroom practices in China's colleges and universities that focus on fostering learner autonomy is centered on secondary school and undergraduate students, while vocational and technical college students receive comparatively less attention. This study, grounded in Vygotsky's sociocultural theory, seeks to explore methods to enhance the autonomy of EFL students in Chinese vocational and technical colleges, with a strong emphasis on empowering students to better manage their learning. Firstly, students should not only gain expertise in their academic subjects but also cultivate proficiency in various learning strategies, especially when studying a foreign language. Secondly, China's exam-oriented educational system causes students to depend excessively on their teachers, limiting their ability to develop autonomous learning abilities. Moreover, EFL learners in vocational and technical colleges display more negative characteristics compared to undergraduates (Wang et al. 2021), particularly in terms of their learning environments, motivation, language proficiency, and attitudes toward learning. These differences are often overlooked in academic research. Therefore, it is essential to tailor educational approaches to meet the specific needs of vocational and technical education students (Han 2019).

This study addresses certain gaps in the existing literature concerning the development of autonomy among EFL learners in Chinese vocational and technical college classroom settings. It also provides valuable guidance for EFL teachers on how to effectively promote learner autonomy in practical classroom environments. In the instructional process,

educators should begin by helping students recognize their individual learning needs, guide them in setting clear learning goals, and assist in aligning these goals with both the course content and foundational knowledge. Moreover, by employing carefully designed instructional scaffolds, teachers can tailor their lesson plans to cater to students' distinct learning requirements. Personalizing education in this way not only enhances students' engagement and interest in the classroom but also fosters their motivation to learn, ultimately boosting their learning autonomy (Maryantini et al. 2020).

Instructors need to guide students in setting clear goals and exploring practical methods to achieve them, particularly given the unique characteristics of Chinese vocational and technical college students, many of whom lack well-defined academic aims (Sun 2020). When students have specific learning goals that align with their zone of proximal development (ZPD), their likelihood of success increases (Norton and D'ambrosio 2008). Scaffolded can help students establish precise, measurable objectives that enhance their use of both classroom and after-school time (Pol et al. 2015). As students become more capable of setting challenging but realistic learning goals, the need for teacher scaffolded should gradually decrease, leading to a more balanced dynamic between teachers and students. Ultimately, students should be able to complete tasks independently that previously required teacher assistance. Secondly, teachers need to focus more on awareness cultivation in using learning strategies in the classroom. The majority of EFL students in Chinese vocational and technical colleges have a poor foundation in language and a thorough comprehension of learning processes (Sun 2020). As a result, they frequently rely on ineffective and mechanical learning strategies while learning on their own. Teachers need to make sure that learning strategies are taught systematically in the classroom to increase students' learning effectiveness and their autonomous learning ability (Nguyen and Gu 2013). This entails teaching students about a variety of learning strategies, including metacognitive, cognitive, and social strategies, as well as assisting them in comprehending how these strategies are used in practice. Students can more actively select and employ learning strategies that work for them when they receive this kind of focused assistance, which greatly increases their learning efficiency. Lastly, evaluating the learning process is essential for fostering learner autonomy (Thanh 2019). In vocational and technical colleges, EFL students often struggle with low self-esteem due to the limitations of their educational background (Sun 2020). This is evident when they speak publicly, often showing signs of hesitation. In contrast, scaffolded instruction employs a range of assessment methods distinct from traditional approaches. Instead of a unidirectional evaluation from teachers to students, scaffolded instruction emphasizes the collaborative and interactive nature of assessment between teachers and learners (Rojas-Drummond et al. 2013). Through methods such as self-assessment, peer evaluation, and group feedback, students gradually build their confidence. Concurrently, teachers should view assessment as an ongoing process, where learners deepen their understanding and proficiency by reflecting on each stage of their learning process.

In conclusion, this study highlights the practical value and theoretical importance of scaffolded instruction in improving the autonomous learning abilities of EFL learners in Chinese vocational and technical colleges.

Future research may consider expanding the sample size, exploring diverse regions or student populations, and investigating long-term impacts of scaffolding to further enrich the

understanding of how instructional strategies can empower learners in underrepresented educational contexts. Besides, investigation about the impact of external factors, such as teacher support, family background, and Internet access, on EFL students' autonomy in Chinese vocational and technical colleges should be further explored in the following research.

Limitations

Despite the valuable insights gained from this study on the impact of scaffolded on learner autonomy of EFL learners in Chinese vocational and technical colleges, there are certain limitations to consider. Firstly, the data were gathered from sophomore EFL students at a public vocational and technical college in Henan Province, China. Although efforts were made to ensure a representative sample, caution is necessary when generalizing the findings. The research is confined to EFL students in Chinese vocational and technical colleges, and the results may not apply to other academic settings, such as undergraduate or graduate programs. Secondly, since the data were primarily obtained from a teacher-training college with a predominantly female student population, the study's ability to explore the learning experiences of male EFL learners is somewhat restricted. To address this limitation, future research should include institutions with a more balanced gender ratio.

References

Chen, S., Shang, X., & Shan, X. (2021). An investigation and analysis of the autonomous English learning ability of vocational college students. *English Square*, 2021, (2), 119–121. https://doi.org/10.16723/j.cnki.yygc.2021.02.036 [in Chinese]

Grice, J. W., & Iwasaki, M. (2009). A truly multivariate approach to MANOVA. *Applied Multivariate Research*, 12, 199. https://doi.org/10.22329/amr.v12i3.660

Han, Q. (2019). Research on teaching methods for vocational and technical education. In *Proceedings of the 2019 International Conference on Advanced Education, Management and Humanities (AEMH 2019)*. https://doi.org/10.2991/aemh-19.2019.14

Kirkpatrick, R., & Zang, Y. (2011). The negative influences of exam-oriented education on Chinese high school students: Backwash from classroom to child. *Language Testing in Asia*, *1*, 36–45. https://doi.org/10.1186/2229-0443-1-3-36

Li, D. (2017). Autonomy in scaffolded as learning in teacher-student negotiation of meaning in a university EFL classroom. *Chinese Journal of Applied Linguistics*, *40*, 410–430. https://doi.org/10.1515/cjal-2017-0024

Liu, H. (2021). *A study on the design and practice of scaffolded teaching activities oriented to autonomous learning ability* (Master's dissertation). Northeast Normal University. [in Chinese]

Liu, Z., Hua, J., & Zhang, Z. (2022). Scaffolded instruction in virtual language learning. *Journal of Language Teaching and Research*, *13*, 386–391. https://doi.org/10.17507/jltr.1302.20

Lu, X., Tang, J., & Luo, X. (2007). An analysis of the examination-oriented education system of China. *Journal of Hubei University of Economics*, *5*, 5–12. https://en.cnki.com.cn/Article_en/CJFDTOTAL-HBSG200706000.htm [in Chinese]

Maryantini, N., Marhaeni, A., & Dewi, N. (2020). The effect of scaffolded strategy on learner autonomy and writing competency of the tenth grade students of SMA N 1 Semarapura in the academic year 2019/2020. *Jurnal Pendidikan Bahasa Inggris Indonesia*, *8*, 31–40. https://doi.org/10.23887/jpbi.v8i2.3355

Meri-Yilan, S. (2019). Learning in scaffolded autonomous e-learning environments amongst EAP students in a UK university. *Focus on ELT Journal*, *1*, 70–85. https://doi.org/10.14744/felt.2019.00002

Nguyen, L., & Gu, Y. (2013). Strategy-based instruction: A learner-focused approach to developing learner autonomy. *Language Teaching Research*, *17*, 30–39. https://doi.org/10.1177/1362168812457528

Norton, A., & D'ambrosio, B. (2008). ZPC and ZPD: Zones of teaching and learning. *Journal for Research in Mathematics Education*, *39*, 220–246. https://www.jstor.org/stable/30034969

Pol, J., Volman, M., Oort, F., & Beishuizen, J. (2015). The effects of scaffolded in the classroom: Support contingency and student independent working time in relation to student achievement, task effort and appreciation of support. *Instructional Science*, *43*, 615–641. https://doi.org/10.1007/s11251-015-9351-z

Ribbe, E., & Bezanilla, M. J. (2013). Scaffolded learner autonomy in online university courses. *Digital Education Review*, *24*, 98–113. https://doi.org/10.1344/der.2013.24.98-112

Rojas-Drummond, S., Torreblanca, O., Pedraza, H., Vélez, M., & Guzmán, K. (2013). Dialogic scaffolded: Enhancing learning and understanding in collaborative contexts. *Learning, Culture and Social Interaction*, *2*, 11–21. https://doi.org/10.1016/J.LCSI.2012.12.003

Sun, X. (2020). A comparative study on the attribution of success or failure of English study between undergraduates and vocational college students. *Journal of Anhui Technical College of Water Resource and Hydroelectric Power*, *20*, 67–70. https://doi.org/10.3969/j.issn.1671-6221.2020.03.019 [in Chinese]

Thanh, N. T. (2019). Promoting learner autonomy through self-assessment and reflection. *VNU Journal of Foreign Studies*, *35*, 146–153. https://doi.org/10.25073/2525-2445/vnufs.4483

Vacca, J. S. (2008). Using scaffolded techniques to teach a social studies lesson about Buddha to sixth graders. *Journal of Adolescent & Adult Literacy*, *51*, 652–658. https://doi.org/10.1598/jaal.51.8.4

Walqui, A. (2006). Scaffolded instruction for English language learners: A conceptual framework. *International Journal of Bilingual Education and Bilingualism*, *9*, 159–180. https://doi.org/10.1080/13670050608668639

Wang, K., Zhu, Y., & Yuan, H. (2021). Research on impact of COVID-19 on the student management of vocational and technical colleges in China based on emerging network technologies. In *2021 2nd International Conference on Big Data and Informatization Education (ICBDIE)* (pp. 353–356). https://doi.org/10.1109/icbdie52740.2021.00086

Wood, D., Bruner, J., & Ross, G. (1976). The role of tutoring in problem solving. *Journal of Child Psychology and Psychiatry, and Allied Disciplines*, *17*, 89–100. https://doi.org/10.1111/J.1469-7610.1976.TB00381.X

Xie, J. (2002). *Preliminary development and pilot testing of the college students' autonomous learning scale* (Master's dissertation). Hunan Normal University. [in Chinese]

Xu, J. (2009). *Autonomy in college foreign language learning: Theory to practice* (1st ed.). China Social and Science Press.