The Impact of Monologic and Dialogic Sequences on Incidental Vocabulary Learning among Chinese Vocational High School EFL Learners

Zhan Xia[1, 2]*, Omer Hassan Ali Mahfoodh[1], Malini NG Ganapathy[1]

[1]School of Languages, Literacies and Translation, Universiti Sains Malaysia, Malaysia
[2]School of International Education, Chengdu Polytechnic, China

Abstract

This study examines the effects of monologic and dialogic task sequences on incidental vocabulary learning among 115 students in four intact classes of a Chinese vocational high school. Twenty vocabulary items including words, phrases and fixed expressions ranging from high to low frequency levels were targeted. Students were required to complete meaning-focused oral tasks by applying different sequence combinations within three weeks. Vocabulary meaning and application, involving meaning recognition, meaning recall, and form recall, were assessed using pre-and post-tests. The results confirmed the efficacy of meaning-focused oral tasks in promoting incidental vocabulary learning and showed that different sequence combinations can lead to varying learning outcomes. The findings suggest that incidental vocabulary meaning learning is more dependent on meaning-focused tasks and less influenced by task sequences. On the other hand, vocabulary application learning is more influenced by task sequences, indicating that a balance between cognitive load and involvement load may have a positive effect on application learning. Pedagogically, the simple-complex-complex sequence in monologic tasks and the complex-simple-complex sequence in dialogic tasks were found to result in significantly worse performance than other sequence combinations for both vocabulary meaning and application learning.

Keywords: *Incidental Vocabulary Learning, Task Sequencing, Monologic Task, Dialogic Task*

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* Corresponding author.
E-mail address: xiazhan@student.usm.my

Introduction

Vocabulary is crucial for effective language acquisition. A large vocabulary enhances communication, making vocabulary knowledge and development essential for achieving language proficiency (Akbarian & Elyasi, 2023). However, the acquisition of vocabulary poses a significant difficulty for second language learners, especially EFL learners with limited competency. This challenge has a direct impact on EFL learners' ability to produce and comprehend language. Various studies have reported that vocabulary size largely influences performance in listening, speaking, reading, and writing (e.g., Alharthi, 2020; Ibrahim et al., 2016; Stæhr, 2008; Yang et al., 2019). Although it remains uncertain whether incidental vocabulary learning predominantly impacts second language vocabulary acquisition, researchers concur that it should be promoted and incorporated into L2 learning (e.g., Nation, 2001; Schmitt, 2000; Waring & Takaki, 2003).

Existing studies focusing on incidental vocabulary learning have primarily concentrated on input modes, such as listening (e.g., Pavia et al., 2019), reading (e.g., De la Viña et al., 2024; Waring & Takaki, 2003), and viewing (e.g., Peters & Webb, 2018; Rodgers & Webb, 2020; Teng & Cui, 2024). This emphasis on input-driven learning can largely be attributed to the influence of Krashen's (1985) Input Hypothesis, which posits that language acquisition occurs primarily through comprehensible input. However, Swain's (1995) output hypothesis emphasizes the critical role of output in language acquisition, suggesting that production activities are also essential components of the learning process. Nevertheless, research on incidental vocabulary learning through output modes remains limited. The predominant focus on input-driven learning may be partly attributed to the understanding of incidental learning as an unintentional process. This perspective tends to marginalize output modes, which typically involve more conscious effort, thus creating a discrepancy with the notion of incidental learning. However, Webb et al. (2023) argue that defining incidental learning strictly as unintentional is problematic since the degree of intentionality can fluctuate among learners and within individuals over time (Webb, 2020). Thus, in a research context, incidental learning is often characterized either as the acquisition of knowledge through meaning-focused tasks (Ellis, 1999) or as learning that occurs without prior awareness of an impending examination (Hulstijn, 2001). Standing from this perspective, incidental vocabulary learning through output modes is justified.

Given that few studies have considered output modes, this study seeks to investigate incidental vocabulary learning through oral tasks within the framework of Task-based Language Teaching (TBLT), where learners acquire new words through meaningful tasks (Ellis et al., 2020). TBLT has been proven to be an effective instructional method and is widely acknowledged (e.g., Badr, 2022; Jing et al., 2022; Khan et al., 2023), but the efficacy of incidental vocabulary learning within TBLT has been underexplored. Furthermore, task sequencing is a crucial variable in TBLT and can serve as a reference for determining the syllabus (Baralt et al., 2014). It has received widespread recognition both in theoretical frameworks and empirical studies for its valuable contributions to effective language instruction (Baralt et al., 2014; Ellis et al., 2020). Chinese vocational high school learners, who often represent a diverse and under-researched population in language acquisition studies, may face unique challenges due to their generally lower English proficiency levels and specific educational contexts. Understanding the effects of task sequencing in this group can provide

insights into more tailored pedagogical approaches that address their specific needs. Therefore, this study incorporates task sequencing as a key variable to derive pedagogical implications. Specifically, it seeks to examine how task sequencing, involving both monologic and dialogic tasks, influences incidental vocabulary learning among Chinese vocational high school EFL learners.

Literature Review

Incidental Vocabulary Learning in Different Learning Contexts

Researchers recommend that incidental vocabulary learning should be promoted, as it is a valuable approach to language acquisition. However, it can be a relatively slow process as learners gradually build their knowledge of words through repeated exposures until they are fully mastered, especially when there are long intervals between encounters (Webb et al., 2023). Although incidental vocabulary learning has been studied in various language learning skills, such as reading (e.g., De la Viña et al., 2024; Waring & Takaki, 2003), listening (e.g., Pavia et al., 2019), and viewing (e.g., Peters & Webb, 2018; Rodgers & Webb, 2020; Teng & Cui, 2024), most studies have focused primarily on reading skills.

Research suggests that incidental vocabulary learning is affected by multiple factors, with oral input being crucial for listening skills, while a combination of reading and listening has been found effective for vocabulary acquisition. Ellis (1999) concluded that a substantial amount of vocabulary acquired incidentally originates from oral input associated with listening skills. Hulstijn (2001) suggested that learning outcomes are influenced by specific context and word frequency. Waring and Takaki (2003) also found that incidental vocabulary learning through reading is an effective method for the development of students' reading comprehension. Brown et al. (2008) showed that combined modes, such as reading and listening, could enhance incidental vocabulary learning. Webb and Chang (2012) found that reading while listening is more effective for word learning. De Vos (2018) conducted a meta-analysis of 32 primary studies, revealing substantial vocabulary gains from spoken input during meaning-focused activities. Peters and Webb (2018) reported that both short videos and TV programmes viewing could facilitate incidental vocabulary learning. Newton (2013) highlighted that few studies have focused on incidental vocabulary learning through output methods, such as incidental vocabulary acquisition in a speaking context.

Studies show that viewing media, such as television and videos, can significantly enhance incidental vocabulary learning, especially when combined with reading and listening, though the process remains gradual with repeated exposure to vocabulary. For example, Rodgers and Webb (2020) confirmed that watching television significantly improves vocabulary knowledge and that there is a positive correlation between word occurrence frequency and vocabulary learning. Perez (2020) found that learners with higher complex working memory showed more incidental learning gains after viewing videos. In a very recent study, Teng (2023) found that videos with full captions, which involving reading, viewing, and listening, have a positive effect on incidental vocabulary learning. Teng (2024) further compared the impact of various input modes—listening, reading, reading while listening, and viewing captioned videos—on incidental vocabulary learning. The study indicated that watching captioned videos leads to superior vocabulary retention in both form and meaning compared to other modes. Additionally, Webb et al. (2023) emphasized that incidental vocabulary learning tends to be a

gradual process, particularly when the intervals between exposures are lengthy. As can be seen, existing studies concentrated on input modes, while output modes, such as speaking and writing, were less considered.

The Theoretical Background of Incidental Vocabulary Learning through Speaking Tasks
The Involvement Load Hypothesis (Laufer & Hulstijn, 2001), which consists of three key components—need, search, and evaluation—provides a theoretical foundation for understanding how oral tasks can facilitate incidental vocabulary learning. Joe et al. (1996) posited that speaking could promote vocabulary learning. This aligns with De la Fuente's (2002) observation that output plays a crucial role in the negotiation process for productive lexical acquisition. Long and Robinson (1998) further supported this view by suggesting that learning is most effective when learners attend to language forms in response to communicative demands. Laufer and Hulstijn (2001) investigated incidental vocabulary learning, focusing on learners' involvement in unfamiliar words during meaningful language use. Their findings revealed that greater engagement with unfamiliar words resulted in improved retention, indicating that learning achieves optimal results when it occurs in response to communicative demands.

In the speaking context, "need" arises naturally as learners must understand and use new words to communicate effectively. "Search" is engaged when learners actively seek out the meanings and appropriate application of unfamiliar words during conversation. Finally, "evaluation" occurs as learners assess the suitability of these words in real time, comparing them to other potential options within the dynamic flow of dialogue. This high involvement load inherent in oral tasks enhances cognitive engagement, thereby promoting deeper processing and retention of new vocabulary, ultimately supporting incidental vocabulary learning. Although the Involvement Load Hypothesis was originally put forward based on interactive contexts, its key components can be extended to support the monologue context as well.

The Theoretical Background of Task Sequencing in TBLT
The core theory behind task sequencing is the Cognition Hypothesis, which posits a strong correlation between cognitive complexity and language acquisition (Ellis et al., 2020; Robinson, 2005). More specifically, the level of cognitive complexity encountered by learners exerts a significant impact on their second language output. Robinson (2001) posited that cognitive complexity, encompassing the attentional, memory, reasoning, and other information-processing demands imposed on language learners by task design, should form the foundation for maximizing language learning through task design. The Cognition Hypothesis underscores that tasks featuring a suitable degree of cognitive complexity are conducive to the evolution of learners' interlanguage systems.

To enhance the theoretical foundation of task sequencing, the Triadic Componential Framework and the SSARC model were developed. The SSARC model refers to Stability, Support, Autonomy, Reflection, and Challenge (Robinson, 2010)—key elements that guide the task progression in a structured and pedagogically sound manner, ensuring that learners gradually build skills and confidence as they engage with increasingly complex activities. The Triadic Componential Framework categorizes task characteristics into three distinct

dimensions: task complexity, task difficulty, and task conditions (Robinson, 2007). Among these, task complexity is the most widely applied reference for sequencing tasks due to its focus on cognitive complexity—a crucial aspect that can be maintained consistently across different tasks (Baralt et al., 2014). According to the framework, task complexity can be manipulated through two dimensions: the resource-directing dimension and the resource-dispersing dimension (Robinson, 2005). The resource-directing dimension guides the learner's cognitive resources toward specific language features that are essential for completing the task, such as +/- few elements, +/- reasoning, and +/- here and then. In contrast, the resource-dispersing dimension does not explicitly instruct the learner on which language features to use but creates a broader cognitive load that indirectly impacts language use, such as +/- planning time, and +/- single task. The SSARC model further provides two specific guidelines for task sequencing. First, "only the cognitive demands of tasks contributing to their intrinsic conceptual and cognitive processing complexity are sequenced" (Robinson, 2010, p. 243). Second, the model suggests that "increase resource-dispersing dimensions of complexity first (e.g., from giving to removing planning time), and then increase resource-directing dimensions (e.g., from removing to adding few elements)" (Robinson, 2010, p. 243).

Related Studies of Task Sequencing in Monologic and Dialogic Tasks
According to the systematic review by Jin and Yan (2024), the research focus has shifted from task complexity to task sequencing. Based on the Cognition Hypothesis, many studies have explored the effect of varied task sequencing on second language performance, focusing on both written and spoken tasks (e.g., Abdi Tabari & Cho, 2022; Kim, 2020). In speaking tasks, researchers have typically explored four main sequencing patterns: simple-to-complex, complex-to-simple, random, and U-shaped (i.e. complex-simple-complex).

Levkina and Gilabert (2014) found that progressing from simple to complex tasks in dialogues did not significantly enhance L2 learners' efficiency in acquiring spatial expressions compared to learners who followed a complex-to-simple or randomized sequence. Similarly, Malicka (2014) observed no substantial difference in monologue task performance when comparing a simple-to-complex sequence against a randomized order. Malicka (2020) introduced a baseline group to examine monologue task performance under a simple-to-complex sequencing scheme. Her findings indicated that such a sequencing strategy led to a higher speech rate, enhanced accuracy, and increased structural complexity in the learners' output. Baralt (2014) assessed L2 development under different sequencing conditions for dialogic tasks in both physical classroom settings and online platforms. Learners in the complex-complex-simple (CCS) and complex-simple-complex (CSC) sequences demonstrated a slight improvement in the use of the Spanish past subjunctive mood in both oral and written post-tasks, outperforming those in the simple-complex-simple (SCS) and simple-simple-complex (SSC) sequences. Moreover, the CCS and CSC groups generated the highest number of Language Related Episodes, aligning with Robinson's (2011) proposition that a U-shaped sequence could be advantageous for language learning. It is noteworthy that Baralt (2014) highlighted that the complexity of tasks, rather than the specific order in which they are sequenced, is more effective in promoting interaction-focused language learning. This conclusion highlights that tasks with higher complexity tend to provide superior learning opportunities and foster greater L2 development. It is evident that previous studies on task

sequencing in speaking contexts have predominantly focused on speaking performance, without involving vocabulary learning. Additionally, most task sequencing studies have employed either monologic or dialogic tasks, but not both simultaneously.

The Present Study

The influence of task sequencing on monologic and dialogic tasks, and its effect on incidental vocabulary learning, remains an underexplored area in research, despite the prevalence of these communication modes in real-life and classroom settings. According to Abbasova (2023), a monologue is characterized by a one-way flow where the speaker expresses an idea concisely without interaction with interlocutors. In contrast, dialogue involves a two-way flow, with live communication between two or more people, where the speaker thinks internally before switching to external speech. These two modes are among the most prevalent patterns in real-life communication and are therefore commonly used in classroom instruction. However, task sequencing in these two modes has rarely been studied as a whole, making the combined effect of task sequencing across monologic and dialogic tasks an underexplored area in research. Thus, this study aims to examine the influence of monologic and dialogic task sequencing on incidental vocabulary learning. Three research questions are guided this study:

RQ1: What is the effect of different sequences of monologic and dialogic tasks on incidental vocabulary learning among Chinese vocational high school EFL Learners?

RQ2: How do the four different combinations of oral task modes and sequences influence incidental vocabulary learning among Chinese vocational high school EFL Learners?

RQ3: To what extent does the interaction between monologic and dialogic sequences influence incidental vocabulary learning among Chinese vocational high school EFL Learners?

Methodology

Research Design

This study employed a quasi-experiment with a 2×2 factorial design to examine the effects of different task sequences on incidental vocabulary learning over three weeks. The study focused on two independent variables: monologic sequence (MS) and dialogic sequence (DS), each with two levels: simple-complex-complex (SCC) and complex-simple-complex (CSC).The four classes were each taught according to the following sequences: Class 1(N=38, Mscc & Dscc) conducted monologic tasks with SCC sequence and dialogic tasks with SCC sequence; Class 2 (N=34, Mscc & Dcsc) conducted monologic tasks with SCC sequence and dialogic tasks with CSC sequence; Class 3 (N=20, Mcsc & Dscc) conducted monologic tasks with CSC sequence and dialogic tasks with SCC sequence; Class 4 (N=23, Mcsc & Dcsc) did monologic tasks with CSC sequence and dialogic tasks with CSC sequence.

Participants

The study involved 115 students from four intact classes at a Chinese vocational high school. All participants were 10th grade students majoring in Preschool Education. In addition to specialized courses designed to prepare them for careers in various trades and industries, students in vocational high school receive general education in subjects including Chinese, English, and Mathematics. English is a compulsory subject with three 40-minute sessions per week. The experiment was seamlessly incorporated into the regular English classes, following

the existing teaching schedule. Of these students, 83 began learning English as a second language in the 3rd grade, while 32 started in the 7th grade. There are 76 females and 39 males ranging in age from 15 to 17 years (M=15.87). They are generally considered low-proficiency learners, with English proficiency levels below the B1 level of the CEFR. The effects of incidental vocabulary learning were assessed using meaning and application tests.

The Target Vocabulary

By incorporating a diverse range of vocabulary, including high, medium, and low-frequency words, the experimental materials were designed to provide a comprehensive perspective on incidental vocabulary learning, thus improving the generalizability and practical relevance of the findings. There are expressions relevant to the oral tasks, including eight adjectives, three nouns, four verb phrases, and five fixed expressions (see Table 1). The phrases and fixed expressions are regarded as lexical chunks, which are broadly classified as vocabulary (Schmitt, 2000), and they play an important role in vocabulary learning (Schmitt, 2000; Zheng, 2023). These expressions were selected for two main reasons: first, according to the designed tasks, they are suitable for use in this context, which may encourage learners to focus on meaning and increase their learning opportunities. Second, most of these words and expressions are commonly used in daily life. According to the British National Corpus and the Corpus of Contemporary American English, all verb phrases are classified as high-frequency words, while nouns and some adjectives fall into the medium-frequency category. Certain descriptive words related to taste, such as "spicy" and "sour", are categorized as low-frequency words. The experimental materials include words across low, medium, and high-frequency ranges to provide a comprehensive reflection of incidental vocabulary learning for words of different frequencies. This approach aims to enhance the generalizability and practical relevance of the experimental findings.

Table 1

Target Vocabulary

Adjectives (8)	Nouns (3)	Verb phrases (4)	Fixed expressions (5)
Sweet/tasty/sour/ spicy/smelly/bitter/ comfortable/relaxed	Menu Restaurant Mood	Make sb. adj. Make sb. do sth. Help sb. do. sth. Give sb. sth.	Can I take your order now? What would you like to have? Would you like anything else? May I get the check, please? I'd like a burger.

Monologic and Dialogic Tasks

In this experiment, there were two monologic tasks and two dialogic tasks. For the simple monologic task, students were given pictures of food and asked to describe one of their favourite foods, focusing on its flavours, reasons for liking it, and their feelings about it. In the complex monologic task, students described two favourite foods from the same three aspects and additionally discussed occasions on which they would eat them. The complexity of the monologic tasks was manipulated based on the resource-directing dimension (see Table 2). The simple task involved describing only one food, indicating "+few elements." The complex task involved two foods and occasions, indicating "-few elements." For the dialogic tasks, students worked in pairs. In the simple version, they received a restaurant menu and role-played a

dialogue between a waiter and a customer to place an order. In the complex version, students discussed what to order, considering a given budget and personal preferences before role-playing the dialogue. While the simple version required no reasoning (indicating "-reasoning"), the budget restrictions and personal preferences in the complex version provided opportunities for reasoning (indicating "+ reasoning").

Table 2
Task Complexity Manipulation

	Simple	Complex
Monologic tasks	+ few elements	- few elements
Dialogic tasks	- reasoning	+ reasoning

Measures
According to previous studies, incidental vocabulary learning can be assessed through form recognition, meaning recognition, form recall, and meaning recall (González-Fernández & Schmitt, 2020; Webb et al., 2023). This study selected form and meaning recognition to create a vocabulary meaning test. Meaning recall and form recall were combined into a vocabulary application test. Two written tests were administered to assess learning outcomes.

The first test was a meaning test, in which students were required to write down the meanings of specific expressions in their native language. The meaning test included twenty items, with each worth one point. The application test focused on the use of verb phrases and fixed expressions, comprising sentence completion and dialogue completion sections. In the sentence completion section, students were provided with sentences that required filling in the blanks according to a given Chinese translation. For example: "Sweet food always _____. (甜食总能让我心情愉悦)" Students were expected to fill in the blank appropriately, such as "Sweet food always gives me a good mood." For the dialogue completion section, a conversation with omitted sentences was presented. Learners had to match the given expressions to appropriate blanks based on the context of the dialogue. There are nine items in this test, each worth one point. In the sentence completion section, incorrect spelling that did not affect understanding was not deducted, as this test aimed to assess whether students understood the meaning of vocabulary and could use it correctly, rather than focusing on spelling.

Procedure
The experimental study was seamlessly incorporated into the regular English classes at the school. To minimize potential biases resulting from students' conscious adjustments to their learning behaviours, precise data collection times were not revealed to the participants. They thought the pre-and post-tests were merely classroom exercises until the experiment concluded. A pre-test was carried out in class before the study began. The experimental period spanned three weeks, with a single 40-minute English class session each week devoted exclusively to oral tasks. Each class averaged the completion of one task per week, with the specific sequence of oral tasks assigned to each class detailed above.

Prior to each task, students were provided with a handout listing the target vocabulary and expressions relevant to the task. No explicit explanations were given and only translations and

example sentences were included in the handouts. Students then engaged in a 15-minute self-planning session, either individually or in pairs, to prepare for the task using the provided materials. Subsequently, the teacher randomly selected several students or pairs to perform the tasks to the class. During these performances, the teacher offered feedback, including implicit corrective feedback on linguistic forms. This involved recasts, where non-target items or incorrect forms were replaced with target language forms or correct forms, focusing on meaning rather than treating language as an object, as defined by Long (2007). For example, if a student said, "Sweet food makes me to feel happy," the instructor corrected with a recast, saying, "Sweet food makes me feel happy," without specifically highlighting the target words and expressions. Following the teacher's feedback, students were instructed to repeat the task.

Data Analysis

Data analysis was conducted using SPSS version 27. To answer research question 1, a paired sample T-test was employed to compare the pre-and post-tests. To answer research question 2, a two-way Multivariate Analysis of Variance (MANOVA) with post hoc comparisons was conducted to find the differences across four classes on the scores of the meaning post-test and application post-test. To answer research question 3, another MANOVA was conducted to examine the main effect and interaction effect between MS and DS. A following simple effect was also analysed based on the results of the interaction effect. To control for baseline differences, the pre-test scores were included as a covariate in the analysis.

Results

Research Question 1

To find out the effect of oral tasks on the incidental learning of vocabulary meaning and application, a series of paired samples t-tests were conducted to compare the scores of pre-and post-tests across four different classes. Table 3 shows the means and standard deviations of scores in pre-and post-tests. Table 4 indicates the result of the paired test and effect sizes. For the vocabulary meaning and application tests, all classes exhibited significant differences between the pre-and post-tests, except for Class 3, which did not show a significant difference in application. The results indicate that nearly all classes obtained improvement in vocabulary meaning and application tests.

Table 3

Means (Standard Deviations) of Scores in Pre-Test and Post-Test

	Meaning Test		Application Test	
	Pre-test M(SD)	Post-test M(SD)	Pre-test M(SD)	Post-test M(SD)
Class 1 (N=38)	5.76 (2.37)	10.00 (3.71)	1.68 (1.93)	4.00 (2.69)
Class 2 (N=34)	6.14 (3.94)	7.85 (3.75)	0.55 (1.23)	2.23 (2.87)
Class 3 (N=20)	8.20 (2.26)	12.40 (2.03)	3.20 (2.33)	4.15 (2.90)
Class 4 (N=23)	9.95 (2.89)	12.95 (1.89)	4.00 (2.62)	5.78 (1.31)

Table 4

*Paired T-Tests Results and Effect Sizes for Pre-Test and Post-Test*

	Pre-test vs. Post-test	Mean (SD)	t	df	p	Cohen's d
Meaning Test	Class1	-4.23 (3.45)	-7.54	37	<0.001	-1.23
	Class2	-1.70 (2.91)	-3.40	33	0.002	-0.59
	Class3	-4.20 (1.98)	-9.44	19	<0.001	-2.11
	Class4	-3.00 (2.02)	-7.11	22	<0.001	-1.48
Application Test	Class1	-2.31 (2.57)	-5.53	37	<0.001	-0.90
	Class2	-1.67 (2.77)	-3.52	33	0.001	-0.61
	Class3	-0.95 (2.70)	-1.57	19	0.133	-0.35
	Class4	-1.78 (2.19)	-3.89	22	<0.001	-0.81

Research Question 2

To find out the differences among the four sequence combinations on two post-tests, a two-way MANOVA was employed to evaluate the differences in the post-test scores of the vocabulary meaning and application tests among four classes. The results indicated a statistically significant effect, $F_{(6, 218)} = 4.46$, $p < 0.001$, $\eta^2 = 0.11$. Specifically, for the meaning test, the effect was significant, $F_{(3, 109)} = 6.70$, $p < 0.001$, $\eta^2 = 0.16$, and for the application test, the effect was also significant, $F_{(3, 109)} = 16.93$, $p = 0.022$, $\eta^2 = 0.08$. Pairwise comparisons among different classes on the two tests were conducted. For the meaning test, Class 2 showed significantly lower scores compared to Class 1, Class 3, and Class 4, with mean differences of -2.32 ($p < 0.001$), -3.17 ($p < 0.001$), and -2.63 ($p = 0.002$) respectively. Class 3 exhibited the highest mean score among all classes, but statistically significant differences were observed. For the application test, Class 2 also exhibited significantly lower scores compared to the other classes, with mean differences of -1.61 ($p = 0.005$) compared to Class 1, and -1.49 ($p = 0.041$) compared to Class 4. No significant differences were observed among other classes. Figure 1 visualizes the trends across classes according to the estimated marginal means.

Figure 1

Trends in Estimated Marginal Means across Classes
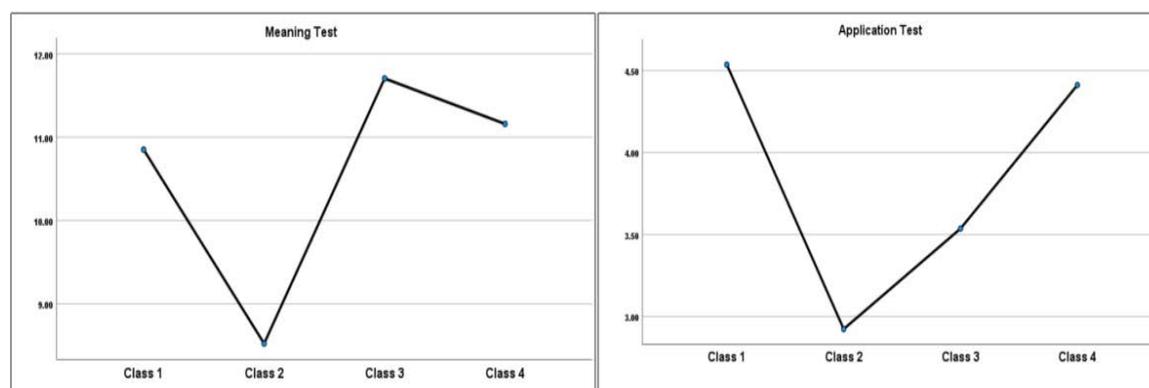
Research Question 3

For research question three, another two-way MANOVA was conducted, in which MS and DS were set as independent variables to investigate whether an interactive effect influences the incidental learning of vocabulary meaning and application. The results show a statistically significant main effect for MS, $F_{(2, 108)} = 5.06$, $p = 0.008$, $\eta^2 = 0.09$, and for DS, $F_{(2, 108)}$

= 4.16, p = 0.018, η² = 0.07. An interactive effect between these two independent variables also shows a significant difference, F (2, 108) = 3.85, p = 0.024, η² = 0.07. Table 5 shows the main and interactive effects of MS and DS on meaning and application tests. The main effect of MS and DS are significant on meaning, but there is no significant interaction effect on meaning. On the other hand, MS and DS do not have significant main effects on application but exhibit a significant interaction effect on application. Figure 2 visualizes the interaction effect of MS and DS on two tests according to the estimated marginal means.
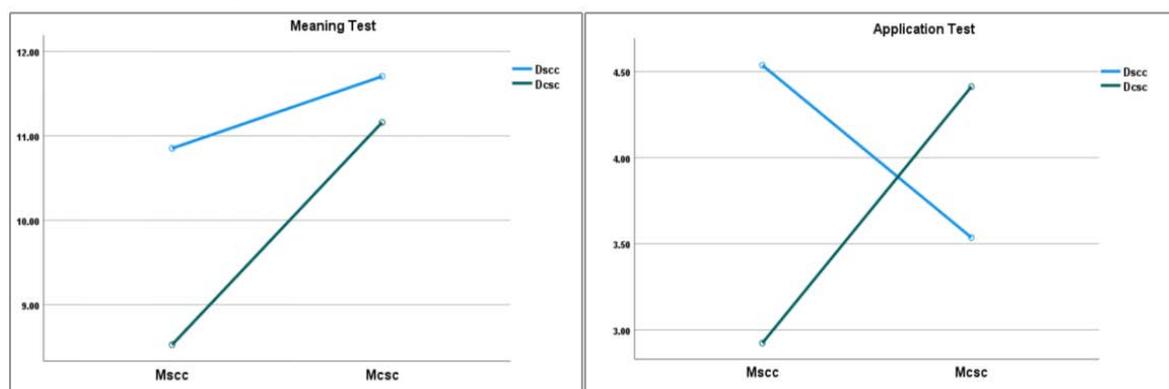
Table 5

The Main and Interactive Effect of MS and DS

		df	F	p	η²
MS	Meaning	1/109	8.38	0.005	0.07
	Application	1/109	0.22	0.640	0.00
DS	Meaning	1/109	7.68	0.007	0.07
	Application	1/109	0.68	0.412	0.01
MS * DS	Meaning	1/109	2.95	0.089	0.03
	Application	1/109	7.71	0.006	0.07

Figure 2

Interaction Plot of MS and DS

Since the interaction effect of MS and DS on the application was found, a simple effect was further analysed and the specific result is shown in Table 6. It can be observed that the SCC sequence leads to a significant effect only in monologic tasks, whereas the CSC sequence exhibits a significant effect only in dialogic tasks.

Table 6

Simple Effects of SCC and CSC Sequences on Application Test

	Monologic Task				Dialogic Task			
	df	F	p	η²	df	F	p	η²
SCC	1/109	8.41	0.005	0.07	1/109	2.35	0.128	0.02
CSC	1/109	1.56	0.215	0.01	1/109	4.29	0.041	0.04

The pairwise comparisons of the simple effect were further analysed. When monologic tasks apply the SCC sequence, the SCC sequence in dialogic tasks leads to significantly higher mean scores than the CSC sequence on application learning, with MD = 1.61, p = 0.005. When monologic task applies the CSC sequence, the SCC sequence in dialogic tasks leads to higher

mean scores than the CSC sequence in the meaning test, yet not significant, with MD= - 0.87, p = 0.215. When dialogic tasks are conducted with the SCC sequence, the SCC sequence in monologic tasks shows no significant difference compared to the CSC sequence, with a slightly higher mean score in the application test (MD = 1.00, p = 0.128). Whereas when dialogic tasks are conducted with CSC sequence, the SCC sequence in monologic tasks shows significantly lower mean scores than the CSC sequence, with MD= -1.48, p = 0.041 in the application test.

Discussion

Effect of Meaning-Focused Oral Tasks on Incidental Vocabulary Learning

The significant differences between pre-test and post-test scores across most of the four classes revealed substantial improvements in the incidental learning of vocabulary meaning and application, confirming that meaning-focused monologic and dialogic tasks can promote incidental vocabulary learning (Joe et al., 1996). This positive result can be explained by the Involvement Load Hypothesis (Laufer & Hulstijn, 2001), which suggests that meaning-focused oral tasks in a TBLT context can lead learners to experience intensive involvement, going through the phases of need, search, and evaluation, ultimately facilitating incidental learning.

However, Class 3 (Mcsc & Dscc) did not show significant improvement in the application test, indicating that the effectiveness of these monologic and dialogic tasks in promoting incidental vocabulary application learning may vary depending on the task sequencing. Additionally, the overall improvement in the application test was smaller compared to the meaning test, where meaning recognition (as assessed in the meaning test) is typically more easily achieved than meaning recall (as assessed in the application test) (González-Fernández & Schmitt, 2020). This may explain why Class 3 showed significant progress in the meaning test but not in the application test, as vocabulary application test requiring meaning and form recall tends to be more challenging than those focused on recognition. Future research could further verify whether the Mcsc & Dscc sequence indeed does not significantly enhance incidental vocabulary application learning.

Different Influences of Sequence Combinations on Incidental Vocabulary Learning

The results of the MANOVA among the four sequence combinations indicated significant differences in both the meaning test (F = 6.70, p < 0.001) and the application test (F = 3.32, p = 0.022). The effect sizes revealed a large effect on the meaning test (η^2 = 0.16) and a medium effect on the application test (η^2 =0.08), suggesting that different combinations of modes and sequences significantly impact incidental vocabulary learning. These findings reinforce the idea that task sequencing plays an essential role in language learning (Ellis et al., 2020).

The effect of sequence combinations on vocabulary meaning learning appears to be more pronounced than on vocabulary application learning, likely because learners acquire the meaning of words relatively easily but often struggle with full usage (Schmitt, 1998). This discrepancy could be attributed to the nature of vocabulary acquisition, where recognition is typically more easily achieved than recall, particularly in more complex application tasks.

Pairwise comparisons revealed that the Mscc & Dcsc combination resulted in significantly lower scores in meaning learning compared to the other sequence combinations. In contrast, the differences in application learning were more subtle: the Mscc & Dcsc combination only showed significantly lower scores than Mscc & Dscc and Mcsc & Dcsc, with no significant

differences among the other combinations. These findings suggest that the Mscc & Dcsc sequence combination is the least effective for promoting incidental learning of both vocabulary meaning and application. It is assumed that this combination might not provide the optimal balance of involvement load necessary for both recognition and recall processes. On the other hand, the other combinations, except for Mscc & Dcsc, showed no significant differences among each other either in meaning learning or application learning, indicating that these sequence combinations might have similar effects on vocabulary learning outcomes. The impact of sequence combinations on incidental vocabulary learning is complex. Future research could further explore the underlying mechanisms that make certain sequence combinations more effective, particularly focusing on how cognitive load and task sequence influence the balance between vocabulary meaning and application learning.

Interaction Effects of MS and DS on Incidental Vocabulary Learning
For vocabulary meaning learning, MS and DS independently facilitated learning, as evidenced by their significant main effects. This indicates that both monologic and dialogic tasks can promote meaning learning regardless of their sequence. However, the lack of a significant interaction effect suggests that the sequence of monologic and dialogic tasks does not produce additional benefits beyond their individual effects. This implies that the enhancement of vocabulary meaning is primarily due to the language exposure provided by the tasks, rather than the specific sequence in which they are presented. In contrast, for vocabulary application learning, MS and DS did not show significant main effects, indicating that the sequence in one task mode may not significantly impact application skills. However, a significant interaction effect suggests that specific sequence combinations do influence incidental vocabulary application learning. This indicates that certain combined sequences may be more effective in promoting vocabulary application than others. Specifically, the Mscc & Dscc and Mcsc & Dcsc combinations were found to be more effective compared to Mscc & Dcsc.

Impact of Task Modes and Sequences on Cognitive Load and Involvement Load
From a cognitive load theory perspective, the SCC sequence likely generates lower cognitive load than the CSC sequence, especially given the lower proficiency level of the learners. The Involvement Load Hypothesis, which includes the components of need, search, and evaluation, provides a framework for understanding these results. In the SCC sequence, the initial simple task reduces the need for target vocabulary, thereby limiting opportunities for search and evaluation. Although the subsequent complex task reintroduces these opportunities, the recency effect may weaken learner engagement, as recently processed information tends to overshadow earlier content. Consequently, the SCC sequence may only allow for partial engagement in the need-search-evaluation cycle, reducing its effectiveness in promoting incidental learning. In contrast, the CSC sequence involves two complex tasks that likely produce higher learner involvement. The initial complex task introduces a challenge, highlighting the gap between the learner's current abilities and the target language, known as the noticing gap (Swain, 1995). This recognition prompts deeper engagement in the need-search-evaluation process. The following simple task then serves as a verification phase, enabling a renewed cycle of involvement without the interference of the previous complex task. Overall, the CSC sequence appears to have a higher involvement load, which may better

facilitate the incidental learning of both word meaning and vocabulary application. Additionally, the interaction between task sequences suggests that while the higher cognitive load in the Mcsc & Dcsc combination is initially demanding, it may be offset by the interaction between monologic and dialogic tasks, resulting in higher involvement load and superior learning outcomes.

Building upon the above assumption, the simple effects of monologic sequence and dialogic sequence could be analysed. When the monologue follows an SCC sequence, the dialogue SCC sequence yields better results than the dialogue CSC sequence, which infers that although the Mscc & Dcsc condition generates higher involvement load, the Mscc & Dscc combination is more balanced from a cognitive load perspective. Moreover, the interaction between the two tasks in the Mscc & Dscc condition may have resulted in a higher involvement load, thereby enhancing performance. When the dialogue follows a CSC sequence, the monologue CSC sequence outperforms the monologue SCC sequence. It is assumed that although the Mcsc & Dcsc combination initially appears to have higher cognitive load than the Mcsc & Dscc combination, the former's cognitive load is mitigated through the interaction between the monologue and dialogue tasks. Additionally, the Mcsc & Dcsc combination exhibits higher involvement load than the Mcsc & Dscc combination, contributing to its superior learning outcomes.

In summary, both the cognitive load and involvement load of tasks significantly influence vocabulary application learning outcomes. The findings suggest that when the cognitive load is low and the involvement load is balanced, learning outcomes improve. When the involvement load is low, it needs to be paired with a low cognitive load. Conversely, when the involvement load is high, the cognitive load can be more substantial without negatively impacting learning. Therefore, the Mscc & Dcsc Class performs significantly worse than the other classes, possibly because it has intermediate levels of both cognitive and involvement loads. Although the Mcsc & Dscc Class does not show statistical significance, its mean performance is still lower than that of the Mscc & Dscc and Mcsc & Dcsc Classes. Regarding incidental learning of vocabulary meaning, it needs fewer cognitive resources than vocabulary application, so the balance between cognitive load and involvement load leads to less significant differences in vocabulary meaning. Thus, only Mscc & Dcsc Class scores are significantly lower than the other three classes, whose scores are relatively close.

Conclusion

This study aimed to investigate the effects of sequences in monologic and dialogic tasks on incidental vocabulary learning among Chinese EFL learners. Four different sequence combinations were designed and examined with vocational high school students. The results showed that meaning-focused monologic and dialogic tasks could significantly facilitate the incidental learning of both vocabulary meanings and applications, and that different task sequence combinations produced different learning effects. The meaning-focused nature and language exposure context of the tasks may be the main reason for incidental learning of vocabulary meaning, not the sequence, while the sequence could be the main reason for incidental learning of vocabulary application.

These findings suggest that vocabulary meaning acquisition is more dependent on meaning-focused tasks and is less influenced by task sequence, cognitive load, and

involvement load, while vocabulary application is more sensitive to these factors. From the perspectives of Cognitive Load Theory and the Involvement Load Hypothesis, when cognitive load and involvement load are balanced, positive learning outcomes are achieved. Due to the interaction effect, the Mscc & Dscc and Mcsc & Dcsc combinations achieve a balance between cognitive load and involvement load, resulting in better learning outcomes in application learning compared to other combinations.

This study offers pedagogical implications that aim to promote incidental vocabulary learning through oral tasks. Based on findings, educators are encouraged to incorporate a diverse range of meaning-focused oral tasks into their curriculum to facilitate the incidental vocabulary learning. This study highlights that application learning is more influenced by task sequence, cognitive load, and involvement load. Therefore, employing the Mscc & Dscc and Mcsc & Dcsc sequence combinations are recommended, as these combinations effectively balance cognitive demands and foster greater vocabulary retention. Educators should consider these sequences when designing lessons to optimize student engagement and improve learning outcomes.

This study's limitations include a small sample size and participants from only one vocational high school, which may affect the generalizability of the results. Future research should investigate the effects of task sequences on incidental vocabulary learning across different proficiency levels and with larger sample sizes to improve the external validity of the findings.

ORCID

https://orcid.org/0009-0005-6055-5854

https://orcid.org/0000-0003-1316-9211

https://orcid.org/0000-0002-1495-6340

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No, there are no conflicting interests.

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