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Research Article

The Impact of Decision-Making and Production Tasks on the Collocational Knowledge of Iranian Intermediate EFL Learners: A Mixed Methods Study

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Abstract

Collocational knowledge is a critical component of language proficiency, significantly impacting fluency and communicative competence in EFL learners. This mixed methods study investigated the effect of decision-making tasks (i.e., identifying, selecting, and matching) and production tasks (i.e., sentence creation, gap-filling, and question-answering) on the collocational knowledge of Iranian intermediate EFL learners. The study employed a mixed methods experimental design with 60 participants selected through purposive sampling based on their performance on the Nelson Proficiency Test to ensure homogeneity in thier language proficiency. Participants were divided into two groups, each receiving six weeks of collocation instruction through either decision-making or production tasks. Quantitative analysis using paired-samples t-tests demonstrated significant improvements in both groups. An independent-samples t-test confirmed that the production group outperformed the decision-making group. Qualitative insights from semi-structured interviews with 12 participants (6 per group) revealed three themes: (a) task engagement and confidence, where production tasks fostered greater confidence in spontaneous collocation use; (b) retention strategies, with production learners benefiting from contextual practice, while decision-making learners relied on recognition-based exercises; and (c) motivational differences, as production tasks, though challenging, were perceived as more rewarding for real-world application. The findings highlight the pedagogical superiority of production tasks in enhancing collocational knowledge and communicative competence. This study has implications for EFL instructors by advocating for task-based approaches that prioritize active, contextualized practice.

Keywords: collocation, collocational knowledge, concordance, corpus, lexical chunks, task-based learning

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1. Introduction

Collocational knowledge is an important dimension of vocabulary knowledge, which highly contributes to near-native fluency in a second/foreign language (Akbarian & Elyasi, 2023). Researchers have recognized the importance of collocation for L2 learners in their pursuit of native-like proficiency, or they have addressed the learners' problems with the production of collocations (Akbarian & Jalilzadeh, 2020). Multi-word units play a crucial role in vocabulary knowledge and contribute to fluency in language usage (Webb et al., 2020). The enhancement of lexical knowledge enables learners to comprehend and generate language with greater precision and fluency, thereby promoting effective communication (Qian & Lin, 2020).

Acknowledging the significance of lexical knowledge reinforces its essential function in language teaching. Among approaches to language teaching, the lexical approach places more emphasis on presenting the words in language chunks rather than in isolation, since language consists of not only grammar, but also vocabulary and multiword chunks. Willis (2006, as cited in Rahimi & Momeni, 2012) suggested that native speakers' fluency is related to the fact that their vocabulary is not stored only as individual words, but also as parts of phrases and larger chunks, which can be retrieved from the memory as a whole and, thus reduce processing difficulties.

Current approaches to language pedagogy increasingly recognize the importance of lexical chunks in language acquisition. The lexical approach (Lewis, 1993) fundamentally challenges the traditional dichotomies of grammar and vocabulary by emphasizing that language competence relies heavily on mastering prefabricated multiword units. This perspective aligns with psycholinguistic evidence showing that native speakers process and store language in chunks rather than individual words (Willis, 2006, as cited in Rahimi & Momeni, 2012). Such chunks, when retrieved as whole units, significantly reduce cognitive processing demands during communication (Hosseinpur & Bagheri, 2025). This theoretical foundation has important implications for teaching collocations that native speakers use intuitively but often pose challenges to L2 learners.

Research on collocation teaching has evolved along three main methodological trajectories. First, receptive approaches focus on developing learners' recognition abilities through tasks like matching exercises and collocation identification (Webb et al., 2020). Second, productive

methodologies emphasize output through activities, such as sentence construction and contextual gap-filling (Akbarian & Elyasi, 2023). Third, hybrid models attempt to integrate both recognition and production elements (Qian & Lin, 2020). While these approaches have all demonstrated some effectiveness, the field lacks consensus on which method yields optimal results. Several critical limitations in the existing scholarship warrant attention. Methodologically, there remains a paucity of mixed methods studies that combine quantitative measurement of learning outcomes with qualitative exploration of learner experiences (Mojaradi et al., 2024). Empirically, few studies have systematically compared the efficacy of different task subtypes (e.g., selection versus production tasks) while controlling for variables such as proficiency level and instructional duration. Theoretically, researchers have inadequately explored how established cognitive frameworks like depth of processing theory (Craik & Lockhart, 1972) might explain differential outcomes across task types. These gaps collectively highlight the need for more nuanced investigations into collocation pedagogy to quantitatively measure learning outcomes (e.g., test scores) and qualitatively explore learners' experiential insights, bridging the what (i.e., quantitative results) with the why (i.e., learners' perspectives). Hence, this study sought to answer the following research questions:

RQ1: Do decision-making tasks have a significant effect on the collocational knowledge of Iranian intermediate EFL learners?

RQ2: Do production tasks have a significant effect on the collocational knowledge of Iranian intermediate EFL learners?

RQ3: Do decision-making tasks and production tasks have significantly different effects on the collocational knowledge of Iranian intermediate EFL learners?

RQ4: How do learners perceive the effectiveness of decision-making and production tasks in developing their collocational knowledge?

2. Literature Review

While the lexical approach (Lewis, 1993) underscores the centrality of collocations in L2 proficiency, recent empirical work has specifically examined how task type mediates collocation acquisition. For example, Webb et al. (2020) found that productive tasks (e.g., sentence creation) led to better retention of collocations than receptive tasks (e.g., matching) in Japanese EFL learners, attributing this to deeper cognitive processing during production.

Similarly, Akbarian and Elyasi (2023) demonstrated that Iranian learners who engaged in gap-filling tasks as a production task significantly outperformed those completing multiple-choice collocation exercises (i.e., a decision-making task) on delayed post-tests, suggesting that active retrieval strengthens long-term memory storage.

Qian and Lin's (2020) meta-analysis revealed that production tasks consistently yield larger effect sizes for collocation learning than decision-making tasks across 32 studies, particularly when tasks require contextualized application (e.g., writing sentences vs. selecting collocations from a list). However, their review highlighted a gap in research comparing these task types within intermediate-level EFL populations, where learners' partial vocabulary knowledge may interact differently with task demands.

Recent empirical research has significantly advanced our understanding of effective collocation instruction. Webb et al. (2020) conducted a meta-analysis of 72 studies, demonstrating that productive tasks (e.g., sentence creation) yielded greater collocation retention than receptive tasks (e.g., matching) across diverse learner populations. Their findings align with Craik and Lockhart's (1972) depth of processing theory, suggesting that active generation promotes deeper cognitive encoding. Akbarian and Elyasi (2023) extended this line of research by comparing flipped and traditional classrooms, revealing that self-regulated learning environments enhanced collocational knowledge among Iranian EFL learners, particularly for verb-noun collocations. Their mixed methods design highlighted the role of learner autonomy in collocation acquisition, a finding corroborated by Mojaradi et al.'s (2024) fMRI study showing increased hippocampal activation during production tasks.

Notably, Qian and Lin's (2020) large-scale meta-analysis of 32 studies identified three key moderators of collocation learning: (a) task type (production > recognition, (b) L1-L2 distance (greater challenges for Asian learners), and (c) proficiency level (intermediate learners benefited most from contextualized practice). Ädel and Erman (2012) highlighted non-native speakers underused conventional collocations in academic writing, relying instead on simpler or L1-influenced combinations. This underscores the need for targeted instruction to bridge the gap between recognition and production, particularly for intermediate learners who may recognize collocations but struggle to deploy them spontaneously. Emerging trends emphasize multi-modal approaches. For instance, Hosseinpur and Bagheri (2025) demonstrated that combining visual glosses with concordance lines boosted collocation recall compared to text-only presentations.

Notably, no prior studies have juxtaposed the specific task subtypes examined here (identifying/selecting/matching vs. sentence creation/gap-filling/question-answering) within a single mixed methods experimental design, while addressing the underexplored role of learners' perception as a qualitative dimension absent in most prior comparisons.

3. Method

3.1. Design

This study employed a quasi-experimental design within an explanatory sequential mixed methods framework (Creswell & Plano Clark, 2022). The independent variable was the type of instructional task with two conditions: decision-making task (i.e., identifying, selecting, matching), and production task (i.e., sentence creation, gap-filling, question-answering). The dependent variable was collocational knowledge, operationalized through a pretest and a posttest, measuring learners' ability to recognize and produce accurate collocations. Due to the quasi-experimental nature of the study, where randomization is not feasible, the conclusions should be interpreted with caution, acknowledging the potential confounding variables such as individual learner differences or instructional context. Following the quantitative analysis, the study incorporated a qualitative phase involving semi-structured interviews with 12 participants (6 from each experimental group to explore learners' perceptions of task effectiveness, challenges, and confidence in collocation use.

3.2. Participants

All of the participants of this study were Iranian intermediate EFL learners at Chabahar Maritime University. Sixty intermediate EFL learners, whose scores were identified as intermediate level according to the scale of the Nelson proficiency test, participated in this study. To establish the homogeneity of the two groups in the case of collocational knowledge, the participants also took a collocation test. Based on their scores, the participants were divided into two homogeneous groups. Then, the two experimental groups received collocation instruction. One of the experimental groups practiced decision-making tasks, and the other group received production tasks. They were aged between 18 and 26. İn the qualitative phase of the study, 12 interviewees (6 from each experimental group) were purposively selected to represent a range of performance levels (i.e., high, medium, and low gains) based on their posttest scores, ensuring diverse perspectives on task

effectiveness. More specifically, two participants with the highest post-test gains, two with medium gains, and two with the lowest gains were interviewed in either group. This method aligns with recommendations for maximizing variation in qualitative sampling (Patton, 1990).

3.3. Instruments

3.3.1. Collocation Materials

The content of the collocation materials used for this study was the same for both groups. One group did decision-making tasks, and the other group performed production tasks. The content of tasks was selected from the following two books: English Collocations in Use: Intermediate Level by McCarthy and O`Dell (2005) and English Collocations in Use: Advanced Level by O`Dell and McCarthy (2008). The content for the other type of tasks was created by the researcher. The sentences for these tasks were selected from the two mentioned books and also from Key Words for Fluency: Intermediate Collocation Practice by Woolard (2005), Collins Cobuild Advanced Learner's English Dictionary (Cobuild, 2006), and Oxford Collocations Dictionary (2009). In addition to these books, the researcher used two online corpora: The British National Corpus (BNC) and The Corpus of Contemporary American English (COCA). The collocations covered topics, such as business, education, health, travel, and daily life, with a total of 90 collocational items (45 lexical and 45 grammatical) used in the study.

3.3.2. Nelson Proficiency Test

The researcher used the Nelson Proficiency Test 300 D to ensure the participants' intermediate level of English language proficiency. This test was taken from Nelson English Language Tests by Fowler and Coe (1976). It contained 50 items. These questions tested the participants` knowledge of grammar, vocabulary and pronunciation of the English words. In terms of reliability, the Nelson 300 test has demonstrated strong internal consistency, with Cronbach's alpha coefficients typically ranging between 0.80 and 0.90 in multiple studies (Al-Khresheh, 2016; Al-Jamal & Al-Jamal, 2014). Regarding validity, the test has been found to have strong content validity, as it systematically covers key language areas such as grammar, vocabulary, and pronunciation. Studies have also supported its criterion-related validity, showing moderate to high correlations ($r \approx 0.70–0.80$) with other standardized proficiency tests like the IELTS and TOEFL (Al-Khresheh, 2016).

3.3.3. The Pretest and Posttest of Collocation

A pre-test of collocation was used as the other required instrument in this study. To fulfill the goals of the study, a test of collocation was administered to determine the participants` collocational knowledge homogeneity in each group. All the participants were given this pre-test before the treatment to ensure the homogeneity of the two groups` collocational knowledge at the beginning of the study. This test consisted of two subtests: lexical collocations and grammatical collocations, each consisting of 45 items. Each subtest had three subsections, which presented a different test task: 15 multiple-choice items, 15 gap-filling items and 15 gap-filling items. This test, which was developed by Salimi et al. (2011), was also used as the posttest to determine the participants` collocational knowledge after the treatment. The collocation pre-test, adapted from Salimi et al. (2011), demonstrated strong content validity through expert judgments and criterion-related validity based on significant correlations with established collocation measures ($\alpha > 0.85$), indicating consistent measurement of lexical and grammatical collocational knowledge across multiple task types (multiple-choice, gap-filling, and translation-assisted items).

3.4. Procedure

Sixty intermediate EFL learners were selected via the Nelson Proficiency Test. The participants were asked to do the test in 45 minutes. Participants that answered at least sixty percent of the questions correctly (30 questions out of 50) could get the pass mark of the Nelson Proficiency Test, and then they were selected as the participants of the study. A pre-test of collocation was administered to determine the collocational knowledge of the participants before the treatment. At the beginning of the test, the instructor provided the participants with the necessary instructions. The participants were required to answer 90 questions in 70 minutes. This test consisted of 45 lexical collocations and 45 grammatical collocations.

After administering the collocation pre-test based on their scores, the participants were divided into two experimental groups (i.e., the decision-making and production groups). Each group consisted of 30 EFL learners aged between 18 and 26. Following the collocation pre-test administration, participants were assigned to either the decision-making group (n=30) or the production group (n=30). The decision-making group engaged in receptive tasks (e.g., identifying, selecting, and matching tasks), while the production group completed active tasks (e.g., gap-filling and sentence generation), with materials derived from collocation references (McCarthy & O'Dell, 2005,

2008; Woolard, 2005) and verified through corpus analysis via BNC and COCA.

The treatment started with the instruction of collocations to both experimental groups. One of the researchers of this study was the instructor for the two groups. To mitigate potential researcher bias, identical collocation materials were used for both groups, differing only in task type. A scripted protocol ensured consistent delivery of instructions (e.g., time allocated, examples provided). Classes were held in the same time slot (back-to-back) to minimize contextual variability. Sessions were audio-recorded (with participant consent) to monitor adherence to the experimental design. For blind scoring, the pretest and posttest were graded by an independent rater unaware of group assignments, using a predefined rubric. For triangulation, qualitative data (interviews) were coded by the researchers, with inter-rater reliability (Cohen's $\kappa = 0.82$) ensuring objectivity. While the researcher's dual role as instructor could theoretically influence outcomes, these measures reduced the risk of bias in task administration and evaluation**.**

For each class, six sessions were conducted to teach the collocation. The conditions for the two groups were the same, such as the teacher and the class period. The difference was in task type for each group. The regular English classes were conducted once a week for both groups. Following the treatment sessions, semi-structured interviews were conducted with a sample of participants from each group to gather qualitative insights into their learning experiences and task preferences.

3.3.4. Data Analysis

The quantitative data were analyzed using SPSS V. 26. Before the experiment, data collected through the Nelson Proficiency Test 300 D were analyzed. Independent-sample t-tests were used to analyze the data collected using the collocation pre-test was analyzed. For Research Questions 1 and 2, a paired-samples t-test compared the pre-test and post-test scores of the decision-making and the production groups. For the third research question, an independent-samples t-test was run to compare the post-test scores of the groups. For the qualitative phase, the semi-structured interviews with 12 participants (6 per group) were thematically analyzed (Braun & Clarke, 2006). Codes were derived inductively, focusing on perceived task utility, confidence in collocation use, and retention challenges. The standard methodology by Field (2018) and Larson-Hall (2015) informed the statistical analysis. The thematic analysis procedures (Braun & Clarke, 2006) are described below to

clarify the qualitative data analysis, while the resulting themes will be presented in the results section. The thematic analysis followed Braun and Clarke's (2006) six-phase framework:

1) Familiarization**:** The lead researcher transcribed and reread interviews to identify initial patterns.
2) Initial Coding: Two independent coders (the lead researcher and a linguistics PhD candidate) generated codes inductively using NVivo 12, focusing on perceptions of task utility, confidence, and retention challenges. Example codes included *active application in speaking* (Production Group) and *recognition vs. recall difficulty* (Decision-Making Group).
3) Theme Development: Codes were clustered into themes (e.g., *Task Engagement and Confidence*) through iterative discussion.
4) Intercoder Reliability: Cohen's kappa was calculated at 0.82, indicating strong agreement. Discrepancies (e.g., overlapping codes for *motivation* and *task stress*) were resolved through consensus.
5) Reviewing Themes: Themes were refined by revisiting raw data. For example, the initial theme *task difficulty* was split into *Motivational Differences* and *Retention Strategies* to better reflect participant narratives.
6) Reporting**:** Exemplar quotes were selected to illustrate each theme.

4. Results

4.1. Results for the Quantitative Phase

4.1.1. Results for the Pre-test of Collocation

The pre-test of collocation was administered to determine the level of collocational knowledge of all participants. An independent-samples *t*-test was run for the results of the two groups to determine if they are homogeneous or not. Table 2 and Table 3 display the descriptive statistics and independent-samples *t*-test results of the collocation pre-test.

Table 1
Descriptive Statistics of the Collocation Pre-test of the Two Groups

	Groups	N	Mean	SD	Std. Error Mean
Pre-test	Decision-making Group	30	19.13	3.67	.67
	Production Group	30	19.40	3.6	.66

Table 1 illustrates, the decision-making group's mean is 19.13 and standard deviation is 3.67 (*M* = 19.13, *SD* = 3.67). In the production group, the mean is 19.4, and the standard deviation is 3.66 (*Mn* = 19.4, *SD* = 3.66). Figure 1 illustrates these results.

Figure 1

Results of the collocation pre-test of both groups

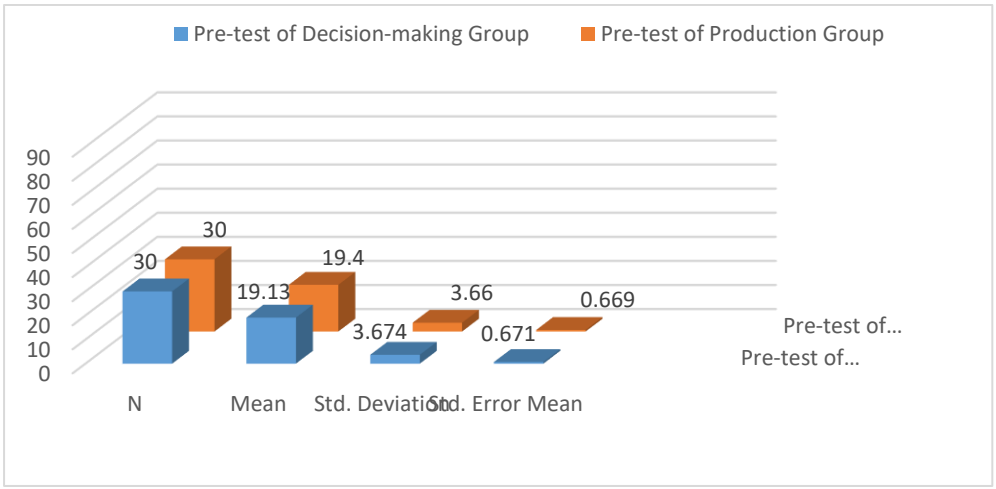

Table 2

Independent-Samples T-Test for of the Collocation Pre-test

	Levene's Test for Equality of Variances		t-test for Equality of Means						
								95% Confidence Interval of the Difference	
	F	Sig.	T	Df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Equal variances assumed	.01	.9	.28	58	.77	.26	.94	-1.62	2.16
Equal variances not assumed			.28	58.0	.77	.26	.94	-1.62	2.16

Table 2 illustrates the independent-samples *t*-test results for the collocation pre-test of the two groups. The significance level is .77, which is bigger than .05. In other words, the two groups proved to be homogeneous at the beginning of the study, $t(58)=.28$, $p=0.77> .05$.

4.1.2. Results for Research Question One

The first research question of this study dealt with the impact of decision-making tasks on the collocational knowledge of Iranian intermediate EFL learners. It was hypothesized that decision-making tasks would have no

significant effect on the collocational knowledge of Iranian intermediate EFL learners. To understand how the decision-making tasks have affected the collocational knowledge of the participants, the performance of the decision-making group on the pre-test and post-test was compared using a paired-samples *t*-test. Table 3 presents the descriptive statistics for the decision-making group.

Table 3
Descriptive Statistics for Decision-Making Group's Pre-test and Post-test Scores

	Mean	N	SD	Std. Error Mean
Decision-Making Group`s Pre-test	19.13	30	3.67	.67
Decision-Making Group`s Post-test	54.00	30	12.8	2.35

As shown in Table 3, the mean values in the pre-test and post-test for the decision-making group are 19.13 and 54, respectively ($M_{pre\text{-}test}$ = 19.13, $M_{post\text{-}test}$ = 54). In other words, the decision-making group`s mean score increased from 19.13 to 54 after the treatment, which shows considerable progress in the participants` collocational knowledge. In the pre-test, the standard deviation is 3.674, and it is 12.88 in the post-test ($SD_{pre\text{-}test}$ = 3.67, $SD_{Post\text{-}test}$ = 12.88). Figure 2 shows these results.

Figure 2
Performance of the Decision-making Group on the Pre-test and Post-test

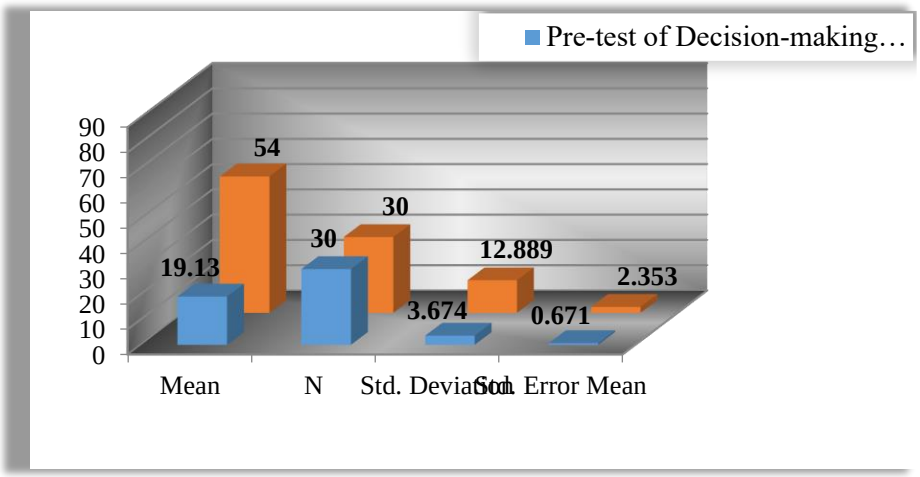

Table 4 presents the a paired-samples *t*-test results for the decision-making group.

Table 4
Paired-samples T-test for the Decision-making Group's Pretest and Posttest

	Paired Differences							
				95% Confidence Interval of the Difference				
	Mean	SD	Std. Error Mean	Lower	Upper	t	df	Sig. (2-tailed)
Pretest-Posttest	34.86	13.62	2.48	29.78	39.95	14.01	29	.00

Based on the results in Table 4, the results of the paired-samples *t*-test indicated the significance is smaller than .05. The results indicated that there was a statistically significant difference between the participants` performance on the pre-test and post-test in the decision-making group, t (29) =14.01, $p < .05$. Thus, the first null hypothesis is rejected.

4.1.3. Results for Research Question Two

The second research question of this study dealt with the impact of production tasks on the collocational knowledge of Iranian intermediate EFL learners. It was hypothesized that production tasks would have no significant effect on the collocational knowledge of Iranian intermediate EFL learners. To find out to what extent the production tasks have succeeded in improving the collocational knowledge of the participants, the pre-test and post-test were compared using a paired-samples *t-test*. Table 5 presents the descriptive statistics for the production group.

Table 5
Paired Samples T-test for Production Group's Pre-test and Post-test Scores

	M	N	SD	Std. Error Mean
Production Group`s Pre-test	19.40	30	3.66	.669
Production Group`s Post-test	60.80	30	11.69	2.13

As Table 5 shows, the mean values for the production group in the pre-test and post-test are 19.40 and 60.8, respectively, and the standard deviation is 3.66 and 11.69, respectively ($SD_{\text{pre-test}} = 3.66$, $SD_{\textit{Post-test}} = 11.69$). Figure 3 illustrates the results of Table 5.

Figure 3
Performance of the Production Group on the Pre-test and Post-test

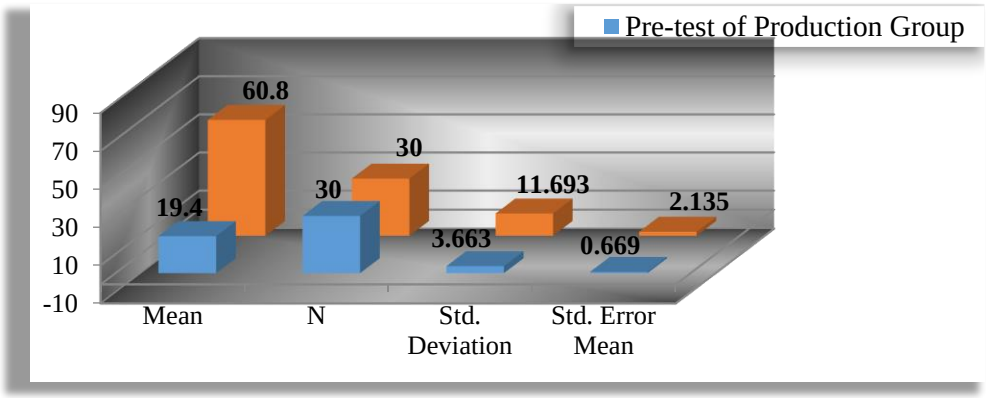

Table 6
Paired-samples T-test for the Production Group's Pretest and Posttest Scores

	Paired Differences							
				95% Confidence Interval of the Difference				
	Mean	S. D	Std. Error Mean	Lower	Upper	t	df	Sig. (2-tailed)
Pretest-Posttest	41.40	12.57	2.29	36.70	46.09	18.03	29	.00

Table 6 illustrates paired-samples *t*-test results of the production group, which testifies to the improvement in the collocational knowledge of the participants, $t(29)=18.03$, $p < .05$. The results indicated that the production tasks used in this group have been an effective factor. Based on these results, the second null hypothesis is rejected.

4.1.4. Results for Research Question Three

The third research question of this study investigated whether decision-making and production tasks have significantly different effects on the collocational knowledge of Iranian intermediate EFL learners. It was hypothesized that decision-making tasks and production tasks would not have significantly different effects on the collocational knowledge of Iranian intermediate EFL learners. The researcher compared both groups` post-test scores to see which type of tasks had a greater effect on the collocational knowledge of the participants using the independent-samples *t*-test. Table 7 represents descriptive statistics for both groups' post-test score.

Table 7
Results of the Collocation Post-test of the Two Groups

Groups	N	Mean	S. D	Std. Error Mean
Decision-making Group	30	54.00	12.88	2.35
Production Group	30	60.80	11.69	2.13

As displayed in Table 7, the mean of the decision-making group is 54, and it is 60.8 for the production group. The standard deviation of the decision-making group is 12.88, and it is 11.69 for the production group. Figure 4 illustrates these results.

Figure 4
Results of the Collocation Posttest of the Two Groups

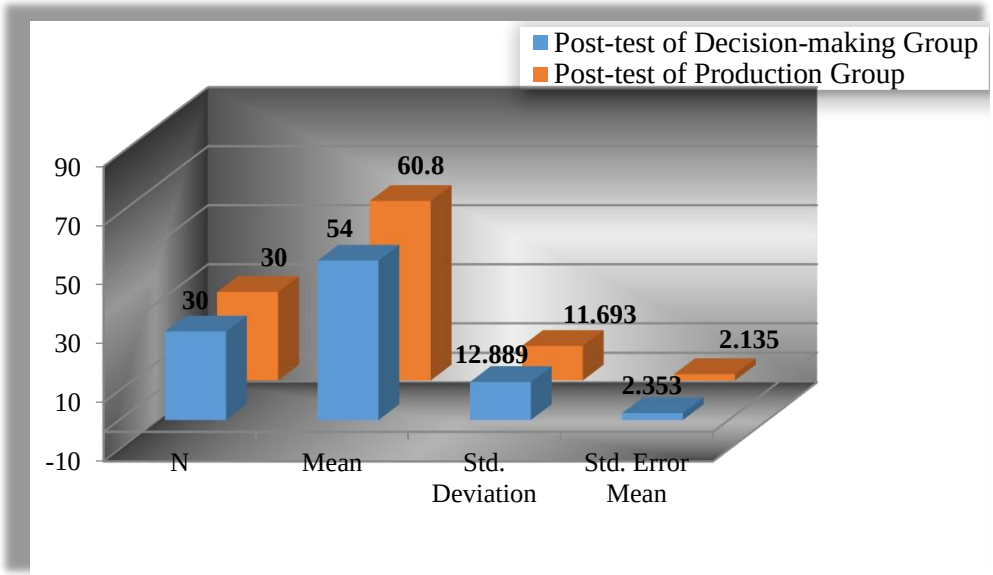

Table 8
Independent-Samples T-test Results of the Collocation Post-test of the Two Groups

	Levene's Test for Equality of Variances		t-test for Equality of Means						
								95% Confidence Interval of the Difference	
	F	Sig.	T	Df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Equal variances assumed	.42	.51	2.14	58	.03	6.80	3.17	.44	13.16
Equal variances not assumed			2.14	57.45	.03	6.80	3.17	.43	13.16

Table 9 illustrates the independent-samples *t*-test results of the collocation post-test of the two groups. Levene`s test tests the null hypothesis that the variances are equal on the grouping variable. The amount of .516 is quite slightly bigger than .05; therefore, the variances are equal. The significance level of the t-test is .037, which is smaller than .05. The results showed that the decision-making group and the production group had a significantly different effect on the collocational knowledge of Iranian intermediate EFL learners, t (58) =.03, $p < .05$. Hence, the third null hypothesis (i.e., the decision-making and production tasks do not have a significantly different effect on the collocational knowledge of Iranian intermediate EFL learners) is rejected.

4.2. Results for the Qualitative Phase

To complement the quantitative findings, semi-structured interviews were conducted with 12 participants (6 from each group) after the post-test. The interviews explored learners' perceptions of task effectiveness, challenges, and self-reported improvements. Three key themes were extracted through thematic analysis as follows.

4.2.1. Task Engagement and Confidence

The participants of the production group reported higher confidence in using collocations spontaneously, attributing this to the active nature of sentence creation and gap-filling tasks. One participant noted, *"Making sentences helped me remember collocations better because I had to think about how words fit together."* Decision-making group learners emphasized improved recognition but expressed difficulty in recalling collocations during speaking tasks.

Extract 1**:** *"When I had to write my own sentences using collocations, it forced me to really understand how the words work together. Now I use them without overthinking."*
Extract 2**:** *"At first, the gap-filling tasks felt hard, but later I noticed myself using phrases like 'heavy rain' naturally in class discussions."*

4.2.2. Retention Strategies

Both groups acknowledged the role of repetition, but the production group highlighted contextual practice as more memorable. Those in the decision-making group relied on matching exercises but struggled to transfer knowledge to unstructured contexts.

***Extract 1*:**
"Matching exercises helped me spot collocations in readings, but I still hesitate to use them when speaking."
***Extract 2*:**

"I aced the multiple-choice tests, but in conversations, I default to simpler words I'm sure about."

4.2.3. Motivational Differences

Production tasks were perceived as more challenging but rewarding, fostering a sense of achievement. Decision-making tasks were viewed as less stressful but less transferable to real-world use.

***Extract 1*:**
"I preferred the low-pressure matching tasks, but they didn't push me to experiment in real conversations."
***Extract 2*:**
"The exercises felt like puzzles—fun to solve, but I'm not sure they improved my speaking."

5. Discussion

The findings of the study revealed three key outcomes: First, production tasks significantly improved the collocational knowledge of the learners, who demonstrated limited collocational knowledge at the outset, aligning with prior research. Second, production tasks outperformed decision-making tasks, with qualitative findings underscoring their cognitive and motivational advantages. The learners' initial collocational deficits corroborate studies highlighting non-native speakers' underuse of conventionalized combinations (e.g., Ädel & Erman, 2012) and weaker collocational confidence (e.g., Granger, 1998). The superiority of production tasks echoes Ellis's (2003) assertion that productive practice strengthens form-meaning mappings more effectively than receptive tasks. Conversely, the findings of this study contrast with the studies favoring receptive training for initial collocation recognition (e.g., Webb et al., 2013), suggesting that task efficacy may depend on learners' proficiency levels and context.

While some studies argue that input flooding through decision-making tasks suffices for collocation learning (e.g., Szudarski, 2018), the results of this study emphasize language output in consolidating collocational knowledge. This discrepancy may stem from differences in task design or learners' L1 interference (e.g., Persian's collocational patterns differ markedly from English). The qualitative data further clarifies these findings. Production tasks' perceived difficulty, linked to higher cognitive load (e.g., Sweller, 2011, may

paradoxically enhance retention through deeper processing, whereas decision-making tasks' ease limits transfer to spontaneous use.

The findings advocate integrating production tasks (e.g., sentence generation) into collocation instruction, as they mirror real-world language use and address passive knowledge gaps noted by Levenston (1979, cited in Schmitt, 2000). However, decision-making tasks retain value for initial exposure, particularly in contexts with limited instructional time (Webb et al., 2020). While earlier studies often contrasted broad categories (e.g., receptive vs. productive tasks), this study dissected specific task subtypes (i.e., identifying/selecting/matching as decision-making tasks versus sentence creation/gap-filling/question-answering as production tasks) within a single experimental design. This granularity reveals how subtle variations in task design influence outcomes (Akbarian & Elyasi, 2023).

The integration of quantitative findings with qualitative learner perceptions offers a holistic understanding of *why* production tasks outperformed decision-making tasks. The qualitative findings revealed three interconnected themes: (a) task engagement and confidence, where production-task learners reported greater ease in spontaneous collocation use (e.g., *'Making sentences helped me remember collocations better'*); (b) retention strategies, with production learners leveraging contextual practice while decision-making learners relied on recognition (e.g., *'Matching exercises helped me spot collocations, but I hesitated to use them'*); and (c) motivational differences, as production tasks, though challenging, were perceived as more rewarding for the real-world application. These themes align with the depth of processing theory (Craik & Lockhart, 1972), wherein production tasks necessitated deeper semantic engagement, which generate collocations rather than merely recognizing them, leading to stronger memory traces (see Webb et al., 2020). Crucially, the qualitative data explain the quantitative superiority of production tasks. Learners' procedural knowledge was strengthened through active application, whereas decision-making tasks fostered declarative knowledge that proved less transferable. This mirrors Nation's (2001) assertion that productive practice bridges the 'knowing-doing gap' in vocabulary learning. Even learners with limited lexical resources benefited from production tasks' cognitive demands, as the challenge of integrating form, meaning, and use promoted autonomy and long-term retention (Ellis, 2003).

6. Conclusions and Implications

This mixed methods study underscores the value of both task types in collocation instruction while advocating for a stronger emphasis on production tasks to bridge the gap between collocational knowledge and use. Although the

findings of this quantitative phase of the study indicated the significant effects of both task types on the collocational knowledge of Iranian intermediate EFL learners, the results proved that the production group performed better than the decision-making group on the post-test. In other words, production tasks were more effective in increasing the collocational knowledge of the participants. Since language production and comprehension depend on recognizing and using appropriate word combinations, teaching collocations through production tasks helps learners practice assembling these patterns in meaningful contexts.

One limitation of this study is the use of an identical collocation test as both pretest and posttest, which may have introduced practice effects, potentially inflating post-test scores due to familiarity with the items. While the significant improvements observed in both groups suggest genuine learning effects, future research could strengthen validity by employing parallel test forms or administering a delayed posttest to assess long-term retention. Additionally, incorporating alternative assessment methods, such as spontaneous production tasks in naturalistic settings, could provide a more comprehensive evaluation of learners' ability to apply collocational knowledge in real-world communication. These methodological refinements would further enhance the reliability and validity of findings on task-based collocation instruction.

This study advances theoretical understanding of collocation acquisition by demonstrating how task type mediates learning outcomes. The findings robustly support the lexical approach (Lewis, 1993) while challenging its traditional implementation. While the theory emphasizes chunk learning, our results specify that active production, not just recognition, is essential for developing usable collocational knowledge. The qualitative data particularly enrich the depth of processing theory by revealing how production tasks create distinctive cognitive pathways: learners' reports of *thinking about real use* during sentence creation tasks illustrate the deeper semantic processing that leads to superior retention and transfer. Furthermore, the study bridges psycholinguistic theories of memory with classroom practice by showing how task-induced cognitive load can enhance rather than hinder learning.

For classroom practitioners, these findings necessitate a strategic shift in collocation instruction. Production tasks like contextualized gap-filling and sentence generation should form the core of vocabulary lessons for developing communicative competence. Teachers should consciously reduce reliance on passive recognition exercises, reserving them only for initial exposure or quick reviews. The study also suggests practical modifications to existing materials:

for instance, transforming traditional matching exercises into two-stage activities where learners first identify collocations and then immediately use them in their sentences. Importantly, the reported motivational benefits of production tasks where learners found challenging activities more rewarding indicate that teachers should frame such tasks as achievable challenges rather than obstacles, potentially increasing engagement in vocabulary learning. Professional development programs should highlight these evidence-based strategies to move collocation teaching beyond its current focus on recognition and memorization.

Several promising avenues emerge from this study's findings. Longitudinal research tracking the retention of collocations learned through different task types could determine whether the observed advantages of production tasks persist over time. The interaction between task type and collocation category (e.g., verb-noun vs. adjective-noun) warrants investigation as some combinations might benefit more from specific task designs. Technological integration also merits exploration. Hence, future studies may examine how digital tools like online corpus-based tasks or adaptive learning systems might optimize the benefits of production tasks while reducing their perceived difficulty. Cross-linguistic comparisons would be valuable, particularly for learners whose L1 collocational patterns differ markedly from English since the cognitive demands of production tasks may vary across language pairs. Finally, research should investigate optimal sequencing of task types within lesson plans to determine whether strategic combinations of decision-making and production activities might yield synergistic benefits.

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