

The Impact of Concept Mapping on Summarizing Short Stories for EFL Learners

Is'haaq Akbarian*¹  & Mehdi Abdolkarimi²

Abstract

Language learners find it hard to change a text's wording and present it differently while maintaining the original meaning in the text. This research, therefore, examined the effect of concept mapping instruction on summarizing short stories for EFL learners. Two intact grade-eight classes were assigned to experimental ($n = 20$) and control ($n = 18$) groups randomly. They summarized a starter-level short story, *Drive into danger*, using a maximum of 450 words as a pretest. Next, the experimental group experienced concept-mapping instruction, whereas the latter group received the traditional way of teaching summarization, for six consecutive weeks. Both groups summarized the same story again, based on their instruction, into a 450-word text at a maximum as a posttest. Pretest and posttest summaries were assessed in terms of content, organization, vocabulary, and language use. The experimental group positively improved on overall performance, content, and organization, marginally improved on vocabulary, but did not improve on language use. Furthermore, the participants' feedback on the instructional treatment supports the statistical results. The findings offer several instructional implications.

Keywords: concept mapping, EFL learners, summarizing, short story, writing

Received: 25 July 2023
Received in revised form: 3 September 2023
Accepted: 23 September 2023

¹ Corresponding Author: Department of English Language and Literature, University of Qom, Iran; Email: ishaaq.akbarian@gmail.com; ORCID: <https://orcid.org/0000-0003-3001-0739>

² Ministry of Education, Qom, Iran; Email: abdolkarimimehdi@yahoo.com

1. Introduction

A much-needed skill in various contexts is summary writing. Buckley (2004) defines it as shortening a text to one-third or one-fourth of its initial length and simultaneously keeping its main idea and the author's meaning. Hedgcock and Ferris (2009) consider it a read-to-write skill, requiring both reading and writing. While reading, the most important points of a text are selected, whereas in writing, summarizers write the selected points in their own words. Cho and Brutt-Griffler (2015) also state that several skills, such as distinguishing major from minor points, deleting the insignificant details, shortening the original text, rephrasing and reorganizing it, are involved in summary writing.

Summary writing of English short stories is a significant and challenging task, usually practiced at all levels, ranging from language institutes and schools to colleges and universities across Iran. The students are asked to summarize a certain-level short story into a short text. Generally, however, Iranian learners' writings contain "problems with various aspects of language" (Akbarian, 2012; Salmani Nodoushan, 2018). Their summaries, more particularly, contain errors as to content, organization, vocabulary, and language use since little attention is paid to summary writing or its instruction. Writing difficulties are also reported in other countries (Loan Nguyen & Suwannabubpha, 2021).

On the other hand, there are two writing assessment scales: holistic and analytic. A widely used scale for analytic writing includes the ESL Composition Profile (Jacobs et al., 1981). It includes five components: a) content, b) organization, c) vocabulary, and d) language use, plus e) mechanics, not investigated in this study. Each component generally focuses on an important dimension of any piece of writing (Coombe et al. 2007). Thus, these aspects also deserve attention in summary writing. Yet, few techniques or strategies are usually taught to help learners in their summarization tasks.

Moreover, it seems a hard process for learners to change the wording of a text, keep the same meaning, and present it differently (Hood, 2008). For Kazantseva and Szpakowicz (2010), short story summarization has not been explored by the text summarization community and needs more research. Although previous studies

emphasize the necessity of summary-writing instruction for EFL learners (e.g., Kim, 2001), they have not scrutinized the effect of a kind of technique or strategy instruction on EFL learners' summary-writing ability, especially that of short stories.

Seen in this light, concept mapping can be a useful technique and/or strategy (Novak & Gowin, 1984) in helping EFL teachers improve their learners' summary-writing ability, too. A concept map serves as a graphic organizer used to organize and represent knowledge. It includes concepts in circles or boxes connected by lines and labeled by some words, called connecting words or phrases. They determine the relationships that concepts have with each other (Novak & Cañas, 2008) (see Figure 1).

These researchers state that concepts are our understanding of the regularities in events or objects around us, which are labeled by language. Concepts are connected to each other to build meaningful statements or propositions. They also define propositions as units of meaning that are our perceptions about how some things are and/or function. So 'the sun is yellow' is a proposition with two concepts, 'sun' and 'yellow', and a linking word 'is'.

2. Literature Review

A concept map can aid learners to understand the organization of texts, find the key concepts and ideas of learning tasks, and simultaneously can help learners provide their summaries. Concept mapping can help learners extract meaning from textbooks and externalize the existing knowledge in their minds (Novak & Gowin, 1984). Graphic organizers can help learners organize new information and recall it (Larsen-Freeman & Anderson, 2011).

Teaching graphic organizers is one of the ways that can help students to recognize discourse structuring in texts easily; they can show text structures and interrelationships among ideas in texts. Choosing a suitable graphic organizer is an important factor in helping students to recognize text structure. Not all graphic organizers are suitable to completely depict a particular type of discourse structure of a text. Graphic organizers which show a text's discourse structure can make the comprehension as well as retention of the material easier for readers in the reading

materials well (Jiang & Grabe, 2007).

The main patterns in discourse structures and the interrelationships existing in ideas and details can thus be represented by graphic organizers. Students can comprehend a text when they know how the text information is organized. Awareness of text organization can increase readers' comprehension abilities (Jiang & Grabe, 2007; Pearson & Fielding, 1991; Trabasso & Bouchard, 2002).

Palmer et al. (2014) replicated and extended a previous study, comparing a dictionary approach skill of learning vocabulary versus a concept-mapping approach to acquiring vocabulary items among four students who suffered from mild disabilities. The findings revealed a noticeable improvement of the students through concept-mapping model, compared with the dictionary approach.

As a pre-writing strategy, Al-Shaer (2014) used concept mapping in better generating argumentative compositions. In a study involving 38 university students attending an English writing course, randomly divided into experimental and control groups, participants received instruction on writing compositions based on information in the assigned book for their course. However, the experimental group further received instruction on construct concept maps and how to write their writing tasks accordingly. The results revealed a positive effect of concept mapping at the stage of pre-writing in writing skill for EFL learners.

In addition, Yen and Yang (2013) explored the impact of concept mapping on Power Point (PPT) slide writing skills. The research was carried out in an English drama course in which the Taiwanese learners had to convert their analytical analysis of reading of dramatic texts into PPT slides. Their findings confirmed that concept mapping could effectively solve their learners' problem of PPT slide writing and develop their writing performance as well.

Rassaei (2017) compared the effectiveness of guided concept mapping versus concept-map correction, showing that both techniques in concept mapping contributed to reading comprehension of L2 participants. Nevertheless, map correction outdid guided concept mapping in improving comprehension in reading. Moreover, his findings showed that concept-map drawing promotes consciousness among the learners in additional reading strategies.

Moreover, Chang et al. (2002) explored the influence of learning through concept mapping through three approaches (map correction, scaffold-fading, as well as map generation) on expository text comprehension and summarization ability of a group of 5th-grade students in Taiwan. They reported that map correction approach improved the learners' text comprehension as well as summarization abilities, scaffolding-fading enhanced just their summarization ability, and map generation did not significantly impact the learners' text summarization and comprehension abilities.

Empirical studies (e.g., Al-Shaer, 2014) have reported positive results on the effect of concept mapping on different aspects of writing. Therefore, the assumption is that concept mapping might equally improve the learners' ability of summarizing narrative texts in general and short stories in particular. If the learners learn concept mapping and its use in understanding the key concepts, ideas, and organization of a text, it will be possible for them to summarize short stories more easily.

Furthermore, from this perspective, concept mapping might lend itself well to teaching summary writing as the analytic writing assessment scale, mentioned earlier, focuses on such elements as content, organization, vocabulary, and language use. These issues seem to correspond well with one another to contribute to summary writing in ELF classes.

To confirm the assumption above, a six-week instruction in accordance with Novak and Gowin's (1984) strategies (introducing concepts, teaching linking words and propositions, elaborating on concept map and its usefulness, concept-mapping modeling, and independent concept mapping and summarizing) was planned to explore the effect of concept mapping on the performance of EFL students in summarizing short stories. Therefore, the questions below directed this research:

Research Questions

1. Does concept-mapping instruction have any effect on enhancing EFL learners' ability in summarizing short stories?
2. If a positive response to the previous research question (RQ) is confirmed, what aspect(s) or component(s) of EFL learners' short story summary writing (content,

organization, vocabulary, or language use) is (or are) affected more by concept-mapping instruction?

3. Method

3.1. Research Site

This quasi-experimental study was conducted in an all-boys junior high school in Qom, Iran. It includes grades seven, eight, and nine with a population of 200 students. The students have to study two English books in an academic year: 1) *Prospect*, a three-level ministry textbook. 2) *Prospect Plus*, a three-level supplementary book and more comprehensive than *Prospect*. The school students are taught how to write simple sentences and paragraphs in English based on their ministry and supplementary books during the academic year in all three grades.

3.2. Participants

The participants ($N = 38$) were selected from a pool of 71 eighth-graders, aged 14 to 16 ($M = 15$), through convenience sampling; we randomly assigned two intact classes to an experimental and a control group. Both groups summarized a short story as the pretest. Then, the first group was given instruction on concept mapping and the latter group received the traditional method of teaching summary writing, for six one-hour sessions for six consecutive weeks. Finally, both groups summarized the same story as the posttest.

3.3. Procedure

All the 8th-grade students ($N = 71$) in two intact classes were required to take a teacher-made test based on *Prospect* (2) and *Prospect Plus* (2). An independent samples *t*-test showed that the obtained scores for the two classes did not differ significantly from one another: Class A ($M = 19.20$, $SD = 1.118$) and Class B ($M = 19.36$, $SD = .99$), $t(69) = -.615$, $p = .540$. Therefore, they were equal in language proficiency needed for the study.

Next, all the 71 students took the first three levels of New Vocabulary Levels Test (NVLT), developed by Mclean and Kramer (2015). One reason for its use was to measure vocabulary proficiency, shown to be the best predictor of learners' ability in reading and writing skills (Akbarian & Alavi, 2013; Staehr, 2008), or reading and listening skills (Kaivanpanah, et al. 2022).

The following criteria were applied to select a homogeneous sample out of the target pool: 1) only the students scoring at least 15, 5, and 3 on the first three sections of NVLT, respectively, were included in the final sample. 2) They also had to score at least 25, as an overall score, on the first three sections of the test. Consequently, 38 students (i.e., 18 students from one class and 20 from the other) were included in the final sample, falling into the same grade range in the NVLT scores, as specified above. The remaining students ($N = 33$) joined the study along with the selected members and turned in their summaries in the allotted time but their data were excluded from the analysis. This was done to decrease the sensitivity of all the participants toward the study and preserve their motivation in class participation.

Also, once we evaluated the students' performance in class during the educational year and analyzed the results from the last two parts of the teacher-made test (the reading and writing sections) and the first summary (i.e., pretest or pre-experiment summary), in accordance with American Council on the Teaching of Foreign Languages (ACTFL) Proficiency Guidelines (Chastain, 1988), the participants' reading and writing proficiency level was determined as intermediate-mid. As such, the participants' summary-writing ability was established.

Intermediate-mid learners are able to write short, simple texts on every day events, daily routine, and personal experience. They can write noncomplex sentences. Their texts have a loose connection in sentences and lack of organization. These learners are able to read short, simple and linguistically noncomplex connected texts on persons and places. The texts are easy and do not need complicated knowledge to understand (Chastain, 1988). Likewise, seventh- and eighth-graders are taught the verb 'be' in present tense, 'there is' and 'there are', modals like 'can' and 'should', articles, countable and uncountable nouns, possessive adjectives, simple present tense, imperatives, and their related issues. They are also taught how to practically use the

above-mentioned grammar while writing simple sentences and paragraphs. Therefore, based on the guidelines above, the students' proficiency levels in reading and writing skills were determined as intermediate-mid.

Because of the school conditions, transferring selected students from one class to the other was impossible; the selected students from each class remained together as intact groups for the study, not allowing randomization as a result. Instead, we specified the two groups as 'experimental' and 'control' randomly. No student was excluded during the study from each group; they participated in the study till the end and turned in their summaries in the allotted time.

To further assure their homogeneity, an independent samples *t*-test did not display any significant differences in the obtained scores on their school language exam for the experimental group ($M = 19.80$, $SD = 0.38$) and control group ($M = 19.58$, $SD = 0.55$; $t(36) = 1.43$, $p = .161$, two-tailed). The difference magnitude in the means (i.e., mean difference = 0.22, 95%, *CI*: -0.09 to 0.52) was small (eta squared = 0.465). The assumptions for the *t*-test were not violated; independence of the observations, no significant outliers, normality, and homogeneity of variances. The experimental and control groups were thus equal in language proficiency, with no preexisting differences to the extent possible.

Then both groups summarized *Drive into danger* (Border, 2008) into a 450-word text at a maximum in two days as the pretest. This starter-level short story was about drug trafficking by a driver in a transportation company, accidentally discovered by two adolescents, and was taken from the Oxford Bookworms Series. The series provide graded reading from starter to stage six, across seven levels. With 250 headwords, it includes 1,400 words that were, like those of other stories, within the NVLT sections they successfully scored. Thus, the participants had no difficulty comprehending the story. The philosophy behind the first summary, as stated above, was to establish the participants' baseline summary-writing ability.

3.3.1. Concept-mapping instruction

We used Novak and Gowin's (1984) strategies, but offered concept-mapping instruction to the experimental group only for six consecutive weeks, that is, one hour

per week, as follows:

Week 1: Introducing concepts

First, the teacher, that is, the second researcher, wrote two lists of familiar words for objects and events (e.g., chair, desk, snowing, skipping) on the board and wanted the students to close their eyes. He asked them if they saw any pictures in their minds while he named each of them. Then, he wrote these two lists in their native language and followed the same process, telling the students that concepts were in the mind and words in different languages were just labels for them. Next, the students added more words to the lists with his help to show they had comprehended the concept, and found the existing concepts in *Surprise!* (A surprise birthday party and a surprise present for Jerry) from *Emma and Jerry* (Zur, O, 2011) (<https://store.really-learn-english.com/products/english-short-stories-emma-and-jerry>), consisting of 10 starter-level short stories. The first two stories, including 500 words each, were used to teach the meanings of concepts, linking words, propositions, and how to draw a concept map of a narrative text before its summary.

Week 2: Teaching linking words and propositions

Writing a list of linking words (e.g., am, is, are, when, then), the teacher asked the students if they saw any pictures in their minds. They answered “No”. Therefore, he explained that these words were not concepts, *but* linking words used to connect concepts in a concept map. He then wrote some sentences on the board to show what propositions were. Here, the learners constructed some short sentences of their own, and identified the concepts and linking words in them. Again, they found some linking words and propositions existing in *Surprise!*

Week 3: Elaborating on concept maps

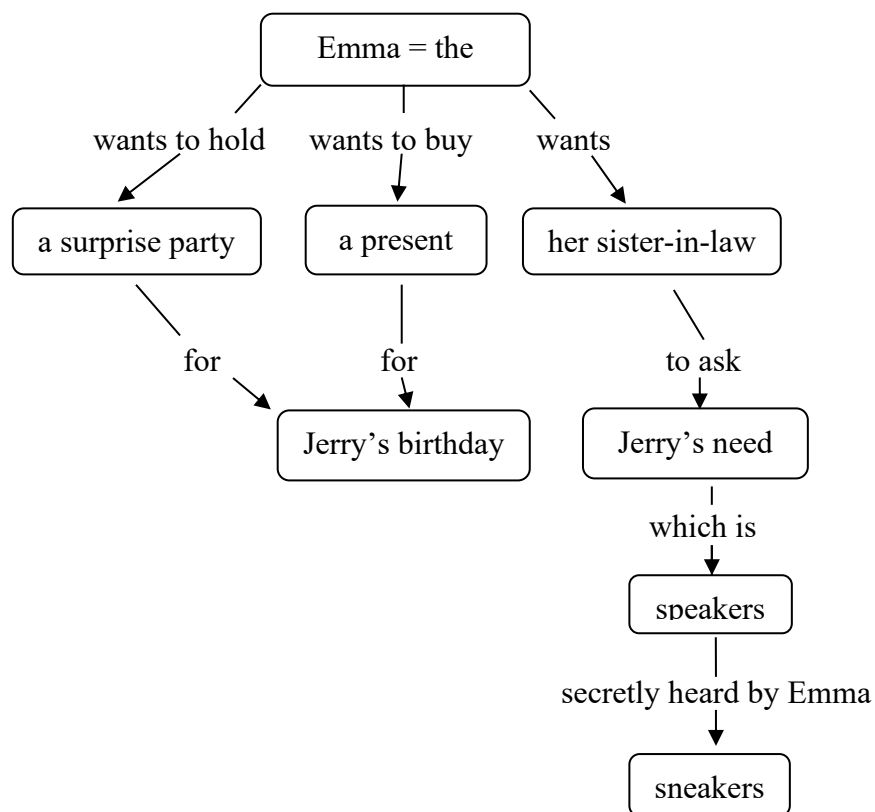
The teacher elaborated upon the definition of concept map and introduced it as an effective strategy for instructing different areas of knowledge and language components, skills, subskills, and summary writing of different text types. He drew a concept map of a familiar topic for the learners in both Persian and English. He explained what superordinate words were and where to use them in a concept map. He then wrote a short paragraph using the words and sentences in the concept maps.

Weeks 4 and 5: Concept-mapping modeling

The students first read ‘*Surprise!*’ completely and the teacher addressed their comprehension problems, if any. With the students’ help, the teacher selected about 12 key concept words, wrote them on the board in order of their occurrence in the story, and told the students that the words carrying the meaning and telling the story needed to be chosen. Then, he started drawing the concept map of the short story with the chosen words and added linking words (Figure 1).

Figure 1

An Illustrative Concept Map for the Short Story, Surprise!



While on the task, the teacher drew their attention to each level of the concept map and explained the importance of observing the organization of the events. He also

elucidated that not all events in the story were important to include in the concept map and the summary, and that some words and sentences were more important than others were as they carried the whole meaning. He included them in the concept map. Upon the concept map that was drawn, the teacher also showed the students that each story started with a beginning, continued with some sentences called body, and closed with an ending or conclusion.

Then the teacher started writing the summary on the board based on the drawn concept map, using all the five or six sentences in the concept map as a paragraph and told that the task was almost over. Again, he elaborated on the significance of observing the correct organization of the events, and showed that the sentences used in the concept map and then in the summary were major points and the ones omitted were minor. He also read the summary aloud and asked the students if it needed any revision. They answered “No”. Finally, the teacher explained each existing tense and the new words briefly.

Week 6: Independent concept mapping

The participants were requested to draw the concept map for the second story, *Oh the Horror*, on a couple with different interests in various movie genres, and summarize it in the classroom. Once more, the teacher reviewed the procedure on how to draw a concept map and write a summary, as practiced previously. The teacher avoided any kind of criticism and alleviated the students’ problems concerned with drawing the concept map, plus the process of summarizing the story. He also told them that their first concept maps were poorly drawn. Therefore, reconstructing could be useful.

Alternatively, the control group received traditional instruction in summary writing, with little attention paid to the process. The teacher used exemplar paragraphs and parts of the stories, shortening them to around one fourth of their length. He thus illustrated how to write their shorter summaries, compared with the original text (weeks 1 and 2), contain the major characters and the setting in their summaries (weeks 3 and 4), and notice the chronological order of the events in the story (weeks 5 and 6). Likewise, these procedures were practiced on the same texts used with the experimental group for six consecutive weeks, that is, one hour per

week again, to ascertain that the instruction quantity was comparable to that of the experimental group. The same teacher offered the traditional instruction as well. The teacher did his best to provide a comparable amount of feedback to both groups.

After the treatment, both groups summarized, *Drive into danger*, using a maximum of 450 words once more as the posttest. They were again allotted two days. This two-day time to summarize the short story both before and after the treatment was observed to a) de-stress the participants for being new to the task, b) handle time limitation in school schedule, and c) let the participants accomplish the summarization tasks with focus as they had other school assignments, too.

Finally, after gathering the second summary, the treatment group participants were requested to write their feedback on the usefulness of applying concept mapping in short story summarization process. They mentioned what aspects, or dimensions (content, organization, vocabulary, and language use) as well as how concept mapping had helped them. They also wrote any other benefits they received from concept mapping. This was done in Persian to let them transfer their ideas easily and comprehensively.

3.3.2. Scoring procedure

Based on Jacobs, Zinkgraf, Wormuth, Hartfiel, and Hughey's (1981) ESL Composition Profile, the following rating scale was adapted to evaluate the participants' summaries:

Content: Is it possible to understand the story from the summaries clearly? Do the summaries provide a sense of completeness? Are the minor points deleted from the story correctly? Are necessary major points mentioned in the summaries?

Organization: Does each summary start with an acceptable beginning (an introductory paragraph or a topic sentence), continue with effective supporting details (body paragraphs or supporting sentences), and end with a suitable conclusion (a concluding sentence or paragraph)? Are the ideas in the summary well-organized and sequenced logically?

Vocabulary: Is there an effective and appropriate vocabulary choice while

summary writing? Is there an appropriate use of word forms?

Language use: Are the sentences well-constructed effectively? Are the sentences grammatically correct from the viewpoint of agreement, articles, tense, number, and prepositions?

The total score for each summary included 100 points, divided among the components, in line with the profile above. The first two components, content and organization, were given 35 points each for receiving more attention in the process of concept-mapping instruction than vocabulary and language use, each with 15 points. The weight for the components weighing 35 or 15 points on the scale was corresponded with numerical ranges analogous to four levels from excellent to very good (35–30) or (15–13), good to average (29–24) or (12–10), fair to poor (23–19) or (9–7), and very poor (18–14) or (6–4), respectively. Numerical ranges (13–1) or (3–1) were preserved for ‘unacceptable’ component use. However, we observed no unacceptable component use.

The second researcher and another rater were involved in scoring. The second rater coded all the summaries, removing the students’ names, numbers, or other information to avoid bias. For higher inter-rating reliability, the two raters assessed the first two summaries together and discussed the points to reach a consensus. The two raters decided to ignore a difference of two points in each component as a consensus. For example, if the students forgot *s*-endings in two words, the raters could ignore them. The final score on each component and overall score on the components in each student’s summary included the average of the two raters’ scores. This procedure was applied to both pretest and posttest summaries.

3.4. Data Analysis

Attempts were made to rule out pre-existing differences between the two groups; the participants were similar in terms of age range, grade in high school, language proficiency scores on the teacher-made test (and their respective level in ACTFL Proficiency Guidelines), scores on the NVLT, and performance on their school language exam, as described earlier. Therefore, using SPSS (version 24), a mixed

between-within subjects analysis of variance (ANOVA) was performed on the two groups' overall scores on pretest and posttest to detect the effect of concept mapping on enhancing the ability of summarizing short stories for EFL learners (i.e., RQ1) and to display what component(s) of the EFL learners' short story summary writing (content, organization, vocabulary, or language use) was (or were) affected more by concept-mapping instruction (i.e., RQ2) since the answer to RQ1 was positive.

4. Results and Discussion

A Pearson correlation analysis was performed to estimate the interrater reliability for the two raters' scores on pretest and posttest, showing high and satisfactory levels of agreement (0.88 and 0.84, respectively) between the raters in scoring.

4.1. RQ1

There was not much difference in the average pretest scores of the experimental and control group on summary-writing ability of the short story. Yet, both groups improved on all the components and, thus, their overall scores increased on their posttest scores. However, the experimental group demonstrated more improvement on the content and organization and thereby on posttest overall scores than the control group (Table 1). This is confirmed through a mixed between-within subjects ANOVA as no preexisting differences were observed between the groups, homogenized through the NVLT, teacher-made test, and school language exam, and other characteristics (see above). The data is considered normal as the skewness and kurtosis for all the data were between -2 to +2 and -7 to +7, respectively (Byrne, 2010). In addition to the general assumptions, homogeneity of variances for summary-writing pretest ($p = .506$) and posttest ($p = .320$) is not violated either and the observed covariance matrices are reported equal for the dependent variables across groups ($p = .001$).

Table 1

Summary-writing Scores for Experimental and Control Group on Pretest and Posttest

Component	Experimental group		Control group	
	Pretest <i>M (SD)</i>	Posttest <i>M (SD)</i>	Pretest <i>M (SD)</i>	Posttest <i>M (SD)</i>
Content	21.80 (2.41)	26.45 (2.40)	22.03 (2.46)	22.64 (2.32)
Organization	22.68 (2.42)	27.45 (2.49)	22.88 (2.44)	23.17 (2.57)
Vocabulary	10.93 (1.12)	11.05 (1.26)	10.17 (1.01)	10.36 (.72)
Language use	10.45 (1.24)	10.63 (1.21)	9.81 (.93)	10.00 (.87)
Overall	65.85 (6.94)	75.58 (6.87)	64.89 (6.22)	66.17 (5.93)

As Table 2 shows, a significant interaction is observed between group type and time, Wilks' Lambda = .18, $F(1, 36) = 168.59$, $p = .000$, partial eta squared = 0.824; the impact of treatment is influenced by the occasion in time. Also, a substantial main effect was observed for time, Wilks' Lambda = .11, $F(1, 36) = 286.03$, $p = .000$, partial eta squared = 0.888; the two groups reveal an increase in their observed scores for the two time periods. Moreover, the main effect for group, which compares the two types of instruction (concept mapping vs traditional approach), was also significant, $F(1, 37) = 6.12$, $p = .018$, partial eta squared = 0.145, proposing a large effect size for the type/group of instruction (Table 3). That is, the scores of both experimental and control group on summary-writing skills improve over time from pretest to posttest; the traditional method of summary-writing instruction was also effective. Yet, the significant results highlight that the experimental was superior over the control group (see Figure 2).

Table 2

Multivariate Tests on the Overall Summary Writing

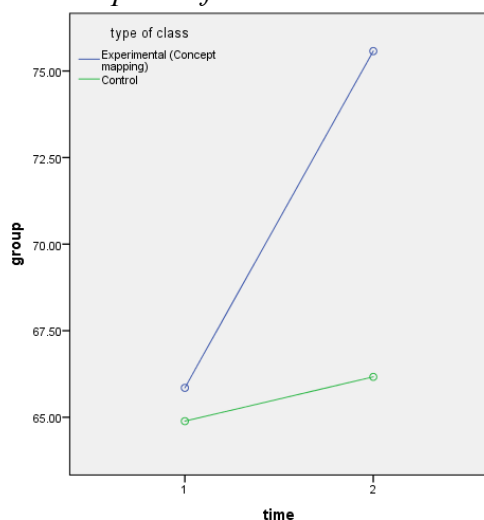
Effect		Value	F	Hypothesis df	Error df	Sig.	Partial Eta Squared
Time	Wilks' Lambda	.112	286.031 ^b	1.000	36.000	.000	.888
time * group	Wilks' Lambda	.176	168.592 ^b	1.000	36.000	.000	.824

a. Design: Intercept + group. Within Subjects Design: time. b. Exact statistic

Table 3*Tests of Between-subjects Effects for the Overall Summary Writing*

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Intercept	351689.936	1	351689.936	4226.914	.000	.992
group	509.331	1	509.331	6.122	.018	.145
Error	2995.291	36	83.203			

Thus, concept-mapping instruction had an eye-catching effect on enhancing the treatment group's summary writing ability of short stories. One logical reason for this achievement is that these learners developed a kind of strategy through concept-mapping instruction to use while summarizing the short story. They learned how to distinguish major from minor points, and how to organize and sequence the points in their summaries logically. During the treatment, they were also partially introduced to the tenses and vocabulary items similar to those of the story they had to summarize.

Figure 2*The Groups' Performance on the Overall Summary Writing*

Regardless of the instruction type, our result corroborates the general findings, obtained by Kim (2001), emphasizing the positive effect of concept-mapping instruction on text summarization. Hence, it indirectly supports Rassaei (2017) in that concept map drawing specifically improves consciousness concerning further

reading strategies, along with reading comprehension. It also supports Larsen-Freeman and Anderson's (2011) claim, stating that graphic organizers can help students with summarizing a text, and Novak and Cañas's (2008) observations who recommend concept mapping as a good way to summarize understandings after studying a unit or chapter. Moreover, as Alvermann (1981) states, students with lower ability in English will benefit a lot from graphic organizers. As the learners in the treatment group were not high in reading and writing proficiency on the basis of ACTFL, concept mapping, a kind of graphic organizer, helped them outperform the learners in the latter group.

Given the summary writing, a writing subskill, and the impact of concept-mapping instruction on different aspects of writing, the current result supports the general findings of Yen and Yang (2013) on the effectiveness of concept mapping on PowerPoint (PPT) slide writing skills, if preparing a power point file is regarded somehow equal to summary writing of a text. This result, by extension, can also support the findings of Al-Shaer (2014) who examined the influence of concept mapping, as an effective strategy, on the writing skill for EFL learners. These investigations highlight the helpful effect of concept mapping on various aspects of writing skill.

Yet, our result for RQ1 does not approve the finding of Chang et al.'s (2002) study; map generation did not have any effect on students' summary writing of expository texts. However, the type of text in their study differed from that of ours. This might be accounted for by the source text features, as Yu (2009) concluded in his study on the effect of source text features on summarizability of a text, that source text features could affect the learners' summary writing ability.

4.2. RQ2

Since the results supported RQ1, we used the same statistical analysis to examine what dependent components (content, organization, vocabulary, or language use) of EFL learners' short story summary writing on the posttest were affected more by concept-mapping instruction. The assumption of variance homogeneity for applying the analysis on the individual components of content, organization, vocabulary, and language use on pretest ($p = .917, .870, .680$, and $.191$, respectively) and posttest ($p = .481, .680, .031$, and $.093$, respectively) is not violated and, on the individual dependent variables, the observed covariance matrices are equal for the two groups ($p = .073, .079, .002$, and $.571$, respectively).

Table 4

Multivariate Tests on the Individual Components of Summary Writing

Component Effect			Value	F	Hypothesis df	Error df	Sig.	Partial Eta Squared
Content	Time	Wilks' Lambda	.138	225.690b	1.000	36.000	.000	.862
	time * group	Wilks' Lambda	.213	133.009b	1.000	36.000	.000	.787
Organization	Time	Wilks' Lambda	.121	261.098b	1.000	36.000	.000	.879
	time * group	Wilks' Lambda	.148	206.839b	1.000	36.000	.000	.852
Vocabulary	Time	Wilks' Lambda	.912	3.478b	1.000	36.000	.070	.088
	time * group	Wilks' Lambda	.995	.164b	1.000	36.000	.688	.005
Language use	Time	Wilks' Lambda	.911	3.525b	1.000	36.000	.069	.089
	time * group	Wilks' Lambda	1.000	.010b	1.000	36.000	.922	.000

a. Design: Intercept + group. Within Subjects Design: time. b. Exact statistic

Table 5*Tests of Between-subjects Effects for the Individual Components of Summary Writing*

	Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Content	Intercept	40895.559	1	40895.559	3737.836	.000	.990
	group	60.822	1	60.822	5.559	.024	.134
	Error	393.875	36	10.941			
Organization	Intercept	43819.102	1	43819.102	3705.711	.000	.990
	group	78.444	1	78.444	6.634	.014	.156
	Error	425.691	36	11.825			
Vocabulary	Intercept	8557.040	1	8557.040	4108.102	.000	.991
	group	9.921	1	9.921	4.763	.036	.117
	Error	74.987	36	2.083			
Language use	Intercept	7916.304	1	7916.304	3637.196	.000	.990
	group	7.633	1	7.633	3.507	.069	.089
	Error	78.353	36	2.176			

The analysis results show that there is a simultaneous effect of time and group type on both content, Wilks' Lambda = .21, $F(1, 36) = 133.01$, $p = .000$, partial eta squared = 0.787 and organization in summary writing, Wilks' Lambda = .14, $F(1, 36) = 206.84$, $p = .000$, partial eta squared = 0.852. There was also a substantial main effect for time on content, Wilks' Lambda = .14, $F(1, 36) = 225.69$, $p = .000$, partial eta squared = .862, with both groups showing an increase in the scores across pre- and post-test (Table 4). Moreover, the main effect was also significant for the two types of instruction on content, $F(1, 37) = 60.82$, $p = .024$, partial eta squared = 0.134, and organization, $F(1, 37) = 6.63$, $p = .014$, partial eta squared = 0.156, suggesting a moderate and large effect size for the type/group of instruction in both components, respectively (Table 5). That is, the scores of both experimental and control group on these two components improve over time from pretest to posttest; the traditional method of summary-writing instruction was also effective. Yet, the performance of the experimental group was superior over the control group (see Figures 3 and 4).

However, the results displayed that instruction group and time did not significantly

interact on vocabulary component, Wilks' Lambda = 1.00, $F(1, 36) = 0.16$, $p = .688$, partial eta squared = 0.005, and on language use component in summary writing, Wilks' Lambda = 1.00, $F(1, 36) = 0.01$, $p = .922$, partial eta squared = 0.000. In the two instruction groups, no substantial main effect was observed for time neither on vocabulary, Wilks' Lambda = 0.91, $F(1, 36) = 3.48$, $p = .070$, partial eta squared = 0.088, and nor on language use component in summary writing, Wilks' Lambda = 0.91, $F(1, 36) = 3.53$, $p = .069$, partial eta squared = 0.089; the two groups revealed very little improvement in the scores on the two components from pretest to posttest (Table 4). Yet, the main effect comparing the two groups on vocabulary component was significant, $F(1, 37) = 4.77$, $p = .036$, partial eta squared = 0.117, suggesting that concept mapping had a moderate effect size on the proper use of vocabulary in summary writing (see Figure 5). In contrast, the main effect comparing the impact of instructing concept mapping with traditional approach on the correct use of language in summary writing was not significant, $F(1, 37) = 7.63$, $p = .069$, partial eta squared = 0.089; the moderate effect size, however, indicates that the instruction could have been useful for language use if more time and attention were allocated to this component as well in the program (see Figure 6).

Figure 3
The Groups' Performance on Content

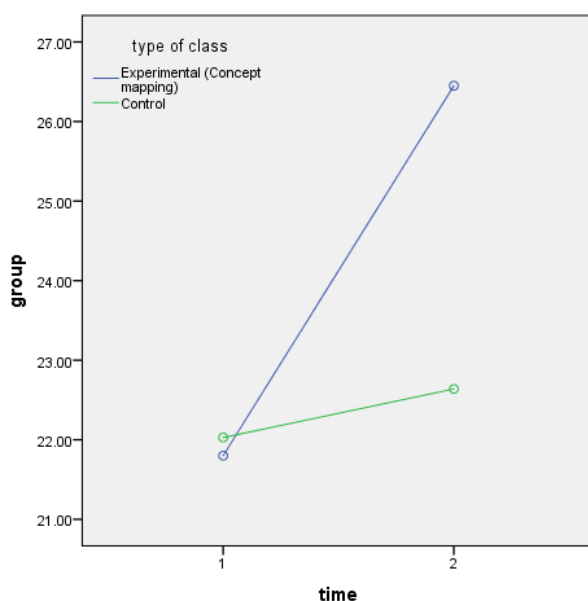


Figure 4
The Groups' Performance on Organization

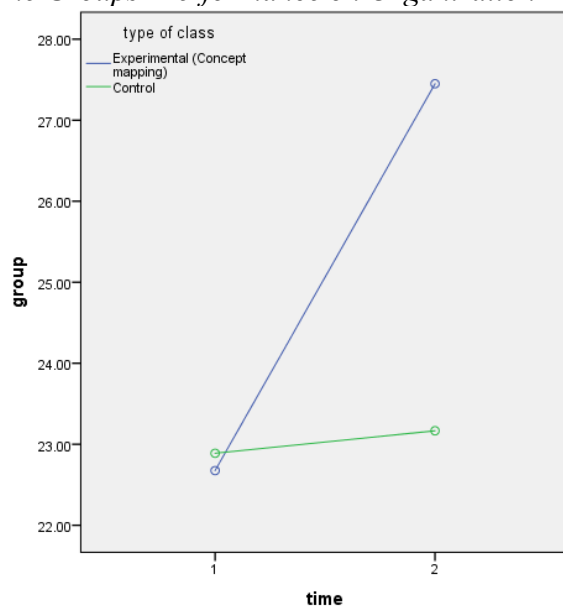


Figure 5
The Groups' Performance on Vocabulary

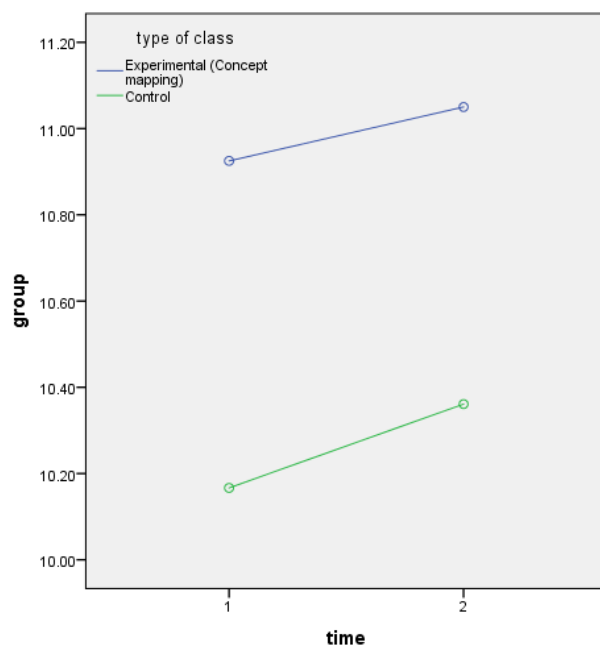
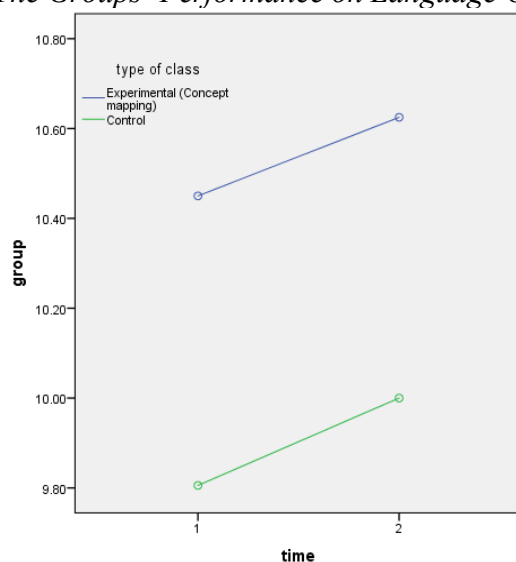


Figure 6
The Groups' Performance on Language Use



The results revealed that only content and organization were influenced by the interaction of type of instruction and the occasion in test time, but not vocabulary and language use. One logical explanation would be the amount of time given to each component during the concept-mapping instruction. More than 80 per cent of the instruction was devoted to the first two components whereas just 30 per cent or less was allocated to vocabulary and language use. During the instruction, just the existing tenses in the stories, including simple present tense, present continuous, the modal of *can*, and some new words, were reviewed while drawing the rehearsal concept maps of *Surprise!* and *Oh the Horror*. Vocabulary and language use were not emphasized on the same level as the components of content and organization. Therefore, such a result seems to be logical on the posttest. Another possible reason can be the students' attention that was more on content and organization. They were really eager to learn how to draw concept maps of the taught stories during the treatment. Consequently, they might have given insufficient and scant attention to vocabulary and language use while summarizing. Moreover, Ortega (2003) states that developing college students' vocabulary complexity and the accuracy of grammar needs about 12 months. By extension, low-level learners also need enough time to improve on these two components. Our finding on the component of organization confirms Larsen-

Freeman and Anderson's (2011) claim that graphic organizers positively affected the understanding of text organization.

In spite of the finding above, the results of our analysis on the main effect comparing the two groups on vocabulary showed that vocabulary in summary writing was also affected by concept-mapping instruction, which is interestingly logical and supported by the literature. Comparing lexical availability with writing ability for EFL learners, Akbarian and Farrokhi (2021) found that the learners, scoring higher or producing "more words on their compositions, clearly generated more words on their [...] task" (p. 60). It might explain our current results, too; EFL "learners with a rich vocabulary are usually more successful [*sic*] in their writings" (p. 60). Correspondingly, concept-mapping instruction generated an opportunity in which summary writing and vocabulary mutually contributed to one another. Moreover, as Kellogg and Raulerson (2007) agree, developing a rich vocabulary repertoire will help a learner develop the other language learning skills, especially writing. Concept mapping might have sharpened the word use among the research participants, despite less time spent on vocabulary component compared to content and organization, which have in turn lead to developing summary writing ability.

Irrespective of the instruction type, our findings almost correspond with those of Chen and Su (2012) who studied a genre-based approach to instructing summary writing for narrative texts. They showed an eye-catching improvement on the two components of content and organization, and a marginal improvement on the component of vocabulary similar to ours. However, they showed a marginal improvement on language use, contrary to our study showing no improvement on language use at all. Our finding on vocabulary also confirms the finding of Palmer et al. (2014) who argued for the possible effect of concept mapping on vocabulary learning.

It is worth mentioning that while assessing the learners' summaries on the pretest, a lot of deviations (i.e., minor points without any influential role in understanding the story [2 & 3], and additional information not existing in the original story in summaries [4]) were observed (see below):

[1] The driver gets directions to Kim. [2] He say that you need to stop 15 minutes here and here... [3] The manager offers to them to get some rest and drink coffee in

his office [4] and talk with each other a little. [5] They continue to drive and arrive the motorway road... [6] Andy cans escape from them... (Yusef)

The example indicates that the students could not distinguish major from minor points and included some sentences or characters from the original story in their summaries that gave no special help with understanding the story. Another digression found in the summaries on the pretest was ignoring the sequence of the events. The students had sometimes ignored and/or changed the chronological order of the events in the story [1 & 2] (see below):

[1] Kim continues to driving... [2] She finds a box stick to truck... [3] they enter to a rubbish bump... [4] Andy say the polices coming... [5] she says to the polices.

These inadequacies revealed that the students had no strategies in their minds prior to the treatment to focus on the sequence of events while reading the story or writing their summaries. However, all the afore-mentioned defects in the experimental group had almost been alleviated after the treatment on the posttest. That is, reading the story to summarize for the pretest did not have a plan whereas concept mapping instruction and concept map development acted as a signpost, or layout, for the experimental group in re-reading the story to re-summarize it for posttest.

Andy cans escape from them. She get the man's gun with a quick movement. She forces them to go to skip. After a while, Andy returns with polices.

However, related more to language use and less to vocabulary, probably due to less time spent on their emphasis in concept-mapping instruction, some deficiencies (omitting *s*-endings in plural nouns and third person singular in simple present, adding *s*-ending to the modals like *can*, neglecting *be* in present progressive, and inappropriate word choices) could be found in both treatment and control groups in both pretest and posttest (see extract 3 above).

4.3. Participants' Comments on Concept Mapping

Almost, all the learners of the treatment group mentioned that concept mapping helped them in summarizing, hence supporting the statistical results for RQ1. Fifteen students (75 per cent) believed that concept mapping was a good technique in helping them focus on the most important concepts of the story and distinguish major from minor points, and

thereby helping them understand the story clearly. Twelve students (60 per cent) believed they could notice the sequence of the events and organize them in their summaries easily by concept mapping. Surprisingly, no students provided any comments on the impact of concept mapping on vocabulary and language use. The above-mentioned comments on each component confirmed the statistical results found in RQ2. Furthermore, five students (25 per cent) stated that they could extend the use of concept mapping to other subjects, like biology; they could memorize biology issues more easily by drawing the concept maps, thus supporting Novak and Gowin's (1984) idea concerning the usefulness of concept mapping in instructing different subject matters.

5. Conclusion

This study focused on the impact of concept-mapping instruction, as a strategy, on writing summaries for EFL learners who summarized the short story, *Drive into danger*, as pretest and posttest. The results displayed that the treatment group outdid the control group in general summary-writing performance. The treatment group also displayed a noticeable improvement on content and organization, and a marginal progress on vocabulary in their summary writing, *but* no statistically significant improvement on language use component either from the interaction effect of time and type of instruction or as a result of concept-mapping instruction, compared with the control group. Furthermore, analyzing the results from perception data disclosed a positive opinion for the treatment group on the usefulness of concept mapping in summarizing short stories, confirming the statistical results.

Previous research shows that we can use components from other fields, like psychology, to aid EFL learners in their language learning process. Concept mapping is such an effective example. Furthermore, our important contribution is that it also highlights a benefit in summary writing for language learners as it helps them understand a text, sort out the points, organize the text's content schematically, and finally summarize it effectively and easily.

Performing the tasks that involve read-to-write activities are really challenging and complex for all learners in general and more complicated for those learning a foreign language in particular (Ruiz-Funes, 1999; Salmani Nodoushan, 2018). Yet,

our findings provide implications for dealing with such tasks. More specifically, they provide implications concerning how to deal with short story summary-writing tasks. For instance, teachers can display concept mapping to their students to give them a general direction on how to approach the task of summarizing narrative texts. They can model a short story summarization task for their students to help them understand what to do in every stage of drawing a concept map while reading short stories. Moreover, through concept mapping, EFL learners are expected to determine the main concepts of short stories, delete their redundant points, find their key ideas, and figure out their general organization and the sequence of the events, thereby allowing them to write their summaries more easily and coherently.

There is no best method of introducing and teaching concept mapping (Novak & Gowin, 1984). Nevertheless, we suggest a tentative pedagogical sequence of the activities in the classroom: reading the story, selecting and ordering the key concept words, drawing a concept map, writing the summary using the sentences of the concept map.

This research has its own limitations as it included only one short story book and one gender selected through convenience sampling, with limited time for treatment. Future research might also focus on vocabulary, though we observed a marginal progress on it, and language use through allotting more time and attention to them. Furthermore, the scoring criteria to evaluate summary writing usually include one aspect about source use (i.e., is written in the learner's own words or verbatim source use). Future researchers might include it in their scoring rubric as the current study did not cover this part. Moreover, researchers can explore how concept mapping, as a graphic organizer, might be adapted to relate literary conceptual elements (e.g., plot, character, setting, and inferential meanings) that operate to create reader engagement even in these starter-level stories. Finally, the control group's participants were not provided with a chance to reflect on their instructions in their summarization process. Through this step, a clearer picture of the process will appear for better comparison.

Acknowledgements

We would like to express our sincere thanks to the participating students and the principal who made the data gathering for this research possible.

References

- Akbarian, I. (2012). [Review of the book *Lexical errors and accuracy in foreign language writing*, by M. D. P. A. Llach]. *Journal of Second Language Writing*, 21, 428–430. <https://doi.org/10.1016/j.jslw.2012.07.004>
- Akbarian, I., & Alavi, S. M. (2013). Comparing the contribution of vocabulary breadth to IELTS and TOEFL reading subtests. *Porta Linguarum*, 20, 135–151.
- Akbarian, I., & Farrokhi, J. (2021). Lexical availability and writing ability of EFL learners. *International Journal of Applied Linguistics*, 31(1), 48–64. <http://dx.doi.org/10.1111/ijal.12319>
- Al-Shaer, I. M. R. (2014). Employing concept mapping as a pre-writing strategy to help EFL learners better generate argumentative compositions. *International Journal for the Scholarship of Teaching and learning*, 8(2), 1–29.
- Alvermann, D. E. (1981). The compensatory effect of graphic organizers on descriptive text. *The Journal of Educational Research*, 75(1), 44–48.
- Buckley, J. (2004). *Fit to print: The Canadian student's guide to essay writing*. Nelson.
- Byrne, B. M. (2010). *Structural equation modeling with AMOS: Basic concepts, applications, and programming*. Lawrence Erlbaum Associates Publishers.
- Chang, K. E., Sung, Y. T., & Chen, I. D. (2002). The effect of concept mapping to enhance text comprehension and summarization. *The Journal of Experimental Education*, 71, 5–23. <https://doi.org/10.1080/00220970209602054>
- Chastain, K. (1988). *Developing second language skills: Theory and practice* (3rd ed.). Harcourt Brace Jovanovich.
- Chen, Y. S., & Su, S. W. (2012). A genre-based approach to teaching EFL summary writing. *ELT Journal*, 66, 184–192. <https://doi.org/10.1093/elt/ccr061>
- Cho, H. & J. Brutt-Griffler. (2015). Integrated reading and writing: A case of Korean English language learners. *Reading in a Foreign Language*, 27(2), 242–261.
- Coombe, C, Folse, K, & Hubly, N. (2007). *A practical guide to assessing English*

language learners. University of Michigan Press

- Hedgcock, J. S., & D. R. Ferris. (2009). *Teaching readers of English: Students, texts, and contexts*. Routledge.
- Hood, S. (2008). Summary writing in academic contexts: Implicating meaning in processes of Change. *Linguistics and Education: An International Research Journal*, 19(4), 351–365.
- Jacobs, H. J., S. A. Zinkgraf, D. R. Wormuth, V. F. Hartfiel, & J. B. Hughey. (1981). *Testing ESL composition: A practical approach*. Newbury House.
- Jiang, X., & Grabe, W. (2007). Graphic organizers in reading instruction: Research findings and issues. *Reading in a Foreign Language*, 19(1), 34–55.
- Kaivanpanah, S., Akbarian, I., & Rezaee, M. (2022). The effects of reading and listening on L2 incidental learning and retention of different dimensions of word knowledge. *Language Related Research*, 7(5), 75–115. <https://doi.org/10.52547/LRR.13.5.3>
- Kazantseva, A. & S. Szpakowicz. (2010). Summarizing short stories. *Computational Linguistics*, 36(1), 71–109.
- Kellogg, R. T., & Raulerson, B. A. (2007). Improving the writing skills of college students. *Psychonomic Bulletin & Review*, 14(2), 237–242. <https://doi.org/10.3758/BF03194058>
- Kim, S. A. (2001). Characteristics of EFL readers' summary writing: A study with Korean university students. *Foreign Language Annals*, 34, 569–581.
- Larsen-Freeman, D. & M. Anderson. (2011). *Techniques and principles in language teaching* (3rd ed.). OUP.
- Loan Nguyen, T. T., & Suwannabubpha, S. (2021). EFL writing at Thai secondary schools: Teachers and students' views, difficulties and expectations. *Language Related Research*, 12(3), 187–214. <https://doi.org/10.29252/LRR.12.3.7>
- McLean, S. & B. Kramer. (2015). The creation of a New Vocabulary Levels Test. *Shiken*, 19(2), 1–11.
- Novak, J. D. & A. J. Cañas. (2008). *The theory underlying concept maps and how to*

construct and use them. Retrieved from
<http://cmap.ihmc.us/docs/pdf/TheoryUnderlyingConceptMaps.pdf>

Novak, J. D. & D. B. Gowin. (1984). *Learning how to learn*. CUP.

Ortega, L. (2003). Syntactic complexity measures and their relationship to L2 proficiency: A research synthesis of college-level L2 writing. *Applied Linguistics*, 24, 492–518.

Palmer, J., Boon, R. T., & Spencer, V. G. (2014). Effects of concept mapping instruction on the vocabulary acquisition skills of seventh-graders with mild disabilities: A replication study. *Reading & Writing Quarterly*, 30, 165–182. <https://doi.org/10.1080/10573569.2013.818890>

Pearson, P. D., & Fielding, L. (1991). Comprehension instruction. In R. Barr, M. L. Kamil, P. Mosenthal, & P. D. Pearson (Eds.), *Handbook of reading research* (pp. 815–860). Longman.

Rassaei, E. (2017). Effects of two forms of concept mapping on L2 reading comprehension and strategy awareness. *Applied Linguistics Review*, 10, 93–116. <https://doi.org/10.1515/applirev-2017-0006>

Ruiz-Furries, M. (1999). The process of reading-to-write used by a skilled Spanish-as-a-foreign-language student: A case study. *Foreign Language Annals*, 32, 45–58. <https://doi.org/10.1111/j.1944-9720.1999.tb02375.x>

Salmani Nodoushan, M. A. (2018). Toward a taxonomy of errors in Iranian EFL learners' basic-level writing. *International Journal of Language Studies*, 12(1), 61–78.

Staehr, L. S. (2008). Vocabulary size and the skills of listening, reading and writing. *Language Learning Journal*, 36, 52–139.

Trabasso, T., & Bouchard, E. (2002). Teaching readers how to comprehend text strategically. In C. C. Block & M. Pressley (Eds.), *Comprehension instruction: Research-based best practices* (pp. 176–200). The Guilford Press.

Yen, A. C., & Yang, P. Y. (2013). Integrating a digital concept mapping into a PPT

slide writing project. *The Turkish Online Journal of Educational Technology*, 12(3), 117–133. <http://www.tojet.net/articles/v12i3/12311.pdf>

Yu, G. (2009). The shifting sands in the effects of source text summarizability on summary writing. *Assessing Writing*, 14, 116–137. <https://doi.org/10.1016/j.asw.2009.04.002>

About the authors

Is'haaq Akbarian, Ph.D. from the University of Tehran, is Associate Professor in Applied linguistics, working at the Department of English Language and Literature, University of Qom, since 1999. His areas of research interest include all aspects of vocabulary studies, and recently AI in vocabulary acquisition. He has presented in conferences and workshops in five countries. His most recent papers were published in *Language Teaching Research* and *International Journal of TESSOL Studies*.

Mehdi Abdolkarimi is an English teacher in Qom, Iran, with experience in teaching English in different high schools and language institutes since 2008. He holds an MA in TEFL from the University of Qom. His research interests are teaching and learning English, and psycholinguistics.