

Original Paper

Investigating the Critical Reading Skills for Saudi EFL Learners through Graphic Organizers Instructional Program

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Abstract

This study investigated the potential effect of a graphic organizers-based instructional program on Saudi EFL students' critical reading skills. To this end, the researcher followed a quasi-experimental design. The sample of the study included 43 freshmen Saudi male students attending the Technology College of Al-Jouf. To carry out this study, the sample was divided into two groups. The first group, which consisted of 21 students, were assigned as the experimental group, while the second group, which consisted of 22 students, were assigned as the control group. The experimental group received treatment through a graphic organizers-based instructional program (i.e., Venn diagram, KWL chart, fishbone, concept mapping, and circle map) for eight weeks, whereas the control was taught using the more conventional method (i.e., using the teacher's book). To collect the data, the researcher used a validated tool, viz. a pre- and post-tests which evaluate critical reading skills. The findings showed that the graphic organizers' strategies contributed significantly towards the development of students' critical reading skills. Based on these findings, the researchers recommended that EFL teachers should take graphic organizers into consideration when teaching reading skills. Further empirical studies on the effects that graphic organizers have on the critical reading skills of other levels of student in other regions of the Kingdom of Saudi Arabia are advised.

Keywords

EFL students, graphic organizers, critical reading skills

1. Introduction

Reading has always been viewed as vital to academic success. Thus, teachers need to attend more to it in the language classroom. If taught properly, readers will be able to figure out the nuances of a reading passage and construct its meanings based on existing resources, in addition to their background knowledge (Hudson, 2007). During the reading process, readers constantly interact actively with

written passages, yet promoting the transfer of these written symbols into meaning(s) in the brain may be contingent upon effective instruction. An increase in knowledge, on the other hand, also necessitates a form of instruction which promotes students' higher-order thinking skills in a professional manner (Bernhardt, 1991; Carrell, 1991; Urquhart & Weir, 1998; Grabe & Stoller, 2002).

Therefore, reading is more than mere decoding; it involves maximizing students' cognitive potentials. These include the skills of differentiation, anticipation, word knowledge, fluency, literal comprehension, critical insights, and flexibility (e.g., Baker, 1985; Grabe, 1991; Ross, 2003). This is why there is no one formal definition of reading since it depends on a variety of different meanings, as well as upon the context or setting in which it occurs (Smith, 2004). Additionally, sometimes reading skills are more of a puzzle due to their involving unfamiliar concepts from both the first and target languages (Shohamy, 1984).

Researchers (e.g., Smith, 1991; Fairbairn & Winch, 1996; Hudson, 2007) have highlighted that critical reading is one of the most important elements of reading comprehension. Through the critical reading process, readers do not only deal with the general ideas of the text but also go beyond it. At that level, the reader is capable of judging the author's ideas, their writing ability and the quality of the language used based on both external and internal factors (Garp & Brewer, 1991). In this regard, Abd Kadir, Subki, Jamal, and Ismail (2014) have affirmed that readers should fully understand texts in order to be able to analyze, synthesize, and evaluate what is read.

Graphic Organizers (henceforth GOs) are visual representations of knowledge that structure information by arranging important aspects of a topic into patterns using labels (Bromley, Devitis, & Modlo, 1995). They are also known as "visual illustrations of verbal statements" (Jones, Pierce, & Hunter, 1988, p. 20). Hence, using GOs as a tool for improving reading skills would help visual learners to enhance their learning process (Sam & Rajan, 2013). Holden (2004) stated that EFL learners will be more strategic readers by using GOs during their learning process because it helps them to create more organized patterns of thought. In this way, GOs allow readers to discover the world and equip them educationally, culturally, and emotionally.

Explicitly, GOs have many functions which can help EFL learners, despite their ages or levels of reading comprehension. They can be used to clarify and organize information into categories, such as main idea, supporting details, topic sentence, cause and effect, etc. Moreover, they can assist learners to organize the required information in a paragraph for better comprehension. In addition, they can be used to construct the meaning of difficult words and sentences by dividing them into fragments. Furthermore, they facilitate learners to activate their prior knowledge through reading the text. Finally, they can aid learners to identify conceptual and perceptual errors that may occur in the reading passages (Sam & Rajan, 2013).

EFL teachers employ GO strategies in the language classroom for a number of reasons. First, once EFL learners find out what the most important thing is to know about in a text, they will be more likely to understand and remember the content. Second, using GOs helps students decrease the semantic process

through reading. As a result, teachers can present the information in more organized ways to maximize the students' comprehension. Finally, EFL learners will be more strategic readers due to the pattern of thinking they develop whilst using GOs throughout the reading process (Ellis, 2004).

Consequently, GOs in the language classroom can help learners to develop their achievement in reading comprehension skills, as well as to advance their critical and thinking skills so that they may understand and construct meaning from a passage by dividing it into smaller, more understandable sentences (Sam & Rajan, 2013). They can also serve as a visual representation of ideas and thoughts so as to better help learners to apply their thinking skills in an organized manner (Miller, 2011).

Additionally, GOs are classified according to their forms and representations, whether they be hierarchical or cyclical in structure); for example, semantic map, structure overview, web concept map, semantic organizer, story map, etc. GOs are organized into eight types based on the purpose of learning; e.g., What I Know, What I Want to Know, and What I Learned chart (KWL chart), history frames, word map, zooming in and zooming out-concepts, zooming in and zooming out-people, inquiry, Venn diagram and column notes (Ciascai, 2009).

GOs have been commonly used in order to develop EFL readers' comprehension skills and attitudes towards implementing these strategies by means of teaching reading skills. EFL teachers should follow systematic procedures to maximize the effectiveness of GOs in the language classroom. To illustrate that, several systematic steps have been suggested by Fly, Jean, and Hunter (1988). First, teachers should present a graphic outline. Then, they should show students how to construct the same outline. Afterwards, they should provide procedural knowledge. Finally, teachers should train the learners and allow them to practice these GOs independently by allowing them to create their own GOs by providing feedback about the vital part of the procedure.

As a result, it seems that it is the responsibility of EFL teachers to train their students to develop their critical reading skills using new strategies. As a researcher, EFL teachers focus on improving reading comprehension by paying just a little amount of attention to the significance of training their students how to read critically. Based on literature (e.g., Lott, 1983; Robinson & Kiewra, 1995; Robinson, 1997; Alagözlü, 2011), graphic organizers have gained researchers' attentions as being one of the most effective teaching tools that teachers utilize to develop their students' learning abilities, especially their EFL/ESL reading skill.

Recently, a number of researchers (e.g., Alshumaimeri, 2011; Nezami, 2012; Al Nooh & McPherson, 2013; Almaahi, 2015; Al-Qhtani, 2016) have noticed that most Saudi EFL teachers do not utilize appropriate strategies in teaching reading skills. In addition to that, it has been noticed that Saudi EFL learners are incompetent when it comes to asking or generating questions related to written texts. Hopefully, using GO strategies would significantly contribute to the enhancement of Saudi EFL learners' critical reading skills given that it was applied appropriately in the students' language classroom, i.e., by providing them with practical programs which encourages them to participate effectively in such activities.

1.1 Statement of the Problem

Throughout the researchers' teaching experience in different Saudi schools, it has been brought to his attention that Saudi EFL learners have a considerable difficulty understanding and critically analyzing written texts. Such a nation-wide problem has been caused by Saudi teachers' utilization of traditional methods in teaching English, such as using the Audio Lingual and Grammar Translation Methods (AlSeghayer, 2011).

By following the views of Bromley, Devitis, and Modlo (1995), Hall and Strangman, (2002), and Almaahi (2015), the researchers have discovered beyond a reasonable doubt that GO strategies (i.e., KWL chart, concept mapping, Venn diagram, fishbone strategy, and circle map) can yield positive results in regard to learners' critical reading skills if properly applied across a range of curriculum subject areas.

1.2 The Purpose of the Study

This study aimed at investigating the effect of GOs based on an instructional program focused on the critical reading skills of male EFL freshmen students at Al-Jouf College of Technology.

1.3 Question of the Study

This study aimed to answer the following question:

Are there any statistically significant differences (at $\alpha = 0.05$) on students' critical reading skills which can be attributed to the teaching method (viz. Graphic Organizers vs. Conventional) which is implemented in the classroom?

1.4 Significance of the Study

This study tended to be significant seeing as it demonstrated the advantages of GO strategies in advancing participant students' critical reading skills. The researcher hopes that, if these strategies prove their usefulness, then they can consequently be adopted by teachers in teaching reading skills so that students can attain better performance with relation to their reading skills. Furthermore, seeing as research in the Saudi context seems lacking, this study is significant as it fills that gap.

This study is significant as it introduces teachers and curriculum designers to a step-by-step instructional program which includes a variety of reading activities. Of course, these activities are intended to be meaningful in that they should help students become inspired to read independently and critically at this stage. Thereby, students will be encouraged to be more positive and active during the learning process. The findings obtained in this study will lead to some pedagogical implications which are beneficial for teachers and learners. Different stakeholders in the field of EFL, such as curriculum and material developers, course and syllabus designers, learners, teachers and teacher trainers can gain positive advantages from the attained outcomes.

1.5 Definition of Terms

In the present study, the terms below have the following meanings:

Instructional Program: contains several activities and techniques which are designed by the researcher with graphic organizer strategies in mind for the purpose of effectively improving students'

critical reading skills. This program includes the Venn diagram, circle map, KWL chart, concept mapping, and fishbone diagram strategies. This instruction program will target the groups to be treated. It will account for the main components of the training program (theoretical orientation, objectives, rationale, type, population, content of the program, and assessment).

Graphic organizers: are defined as “visual illustrations of verbal statements” (Jones, Pierce, & Hunter, 1988, p. 20). In this study, GOs are used as part of a teaching strategy which incorporates the Venn diagram, multiple timeline, KWL chart, concept mapping, and fishbone diagram strategies in order to better develop students’ critical reading sub-skills.

Concept mapping: is defined as “a graphical tool for organizing and representing knowledge” (Coutinho, 2014, p. 111). In this study, concept mapping is used as a teaching strategy which begins with a main idea and then expands outward to more in-depth sub-ideas.

Venn diagram: is defined as “a graphic organizer that provides a visual comparison of similarities and differences between subjects” (Mcknight, 2010, p. 12). In this study, the Venn diagram is used as a strategy to help students compare and contrast between the topics, information, or ideas of a reading passage.

Fishbone diagram: is defined as “a graphic organizer to analyze an event, object or issue by utilizing web diagram” (Kruse, 2010, p. 40). In this study, the fishbone diagram is used as a web-diagram for the purpose of developing students’ skills of identifying the possible causes of an effect or a problem.

KWL chart: is defined as “a graphic organizer [which] can be used to help students understand [the] questions of what they know (K), what they want to know (W), how they will learn (H), and what they have learned (L) in relation to a specific topic” (Hong Kung Curriculum Development Institute, 2001, p. 55). In this study, the KWL chart is used as a reading strategy for activating students’ background knowledge and developing the students’ interaction with the reading passages in terms of three columns: *what we know, what we want to know, and what we learned*.

Overlapping circle map: is defined as “a graphic organizer which can be used to help students develop skill in comparing and contrasting similarities and differences and it may consist of two or more circles” (Hong Kung Curriculum Development Institute, 2001, p. 74). In this study, the overlapping circle map is used as a reading strategy for the purpose of developing students’ skill of providing several synonyms and antonyms for the chosen words from the text and generating as many ideas as possible.

Critical reading: is “the ability to make judgments and inferences, distinguish between fact and opinion, and recognize the author’s purpose or point of view” (Darch & Kameenui, 1987, p. 82). In the present study, the skill of critical reading refers to its four sub-skills, i.e., the ability to differentiate between fact and opinion (e.g., the student is asked to differentiate sentences or phrases that show facts or opinions), to use references (e.g., the student is asked to choose the correct answer based on the type of sentence), to anticipate (e.g., the student is asked to read the topic of the text and decide what the topic will be about), and to show word knowledge (e.g., the student is asked to choose the correct

word based on the semantic level of the sentence). The students' abilities with regards the skill of critical reading will be measured by means of a critical reading test which has been designed for that purpose.

1.6 Limitations of the Study

- 1) This study was carried out during one semester; a longer duration may have different results.
- 2) This study was limited to the freshmen students of the Al-Jouf College of Technology in the Al-Jouf region of northern Saudi Arabia; thus, the results can be generalizable in similar educational settings.
- 3) The participants in this study included only male students. A study which targets both male and female students may present more readily generalizable results.
- 4) The experimental group was taught by the researcher himself, while the controlled group was taught by another EFL teacher.

2. Related Literature

2.1 Theoretical Research

2.1.1 Critical Reading

Various definitions of critical reading have been given by many researchers. For example, Darch and Kameenui (1987, p. 82) defined the skill of critical reading as "the ability to make judgment and inferences, distinguish between facts and opinions, and recognize the author's purpose or point of view." Carr (1988, p. 70), on the other hand, stated that critical reading is the skill of "learning to evaluate, draw inferences, and arrive at conclusions based on evidence." Moreover, Freeley and Steinberg (2000, p. 2) determined that the critical reading skill as "the ability to analyze, criticize, and advocate ideas."

Critical reading is also an interactive process which allows the reader to use multiple levels of thinking simultaneously. Through analysis, it is expected that the reader can explain the information by highlighting key components of the text. The reader can also combine relevant parts to produce a coherent picture. Furthermore, it enables the reader to evaluate the written text by establishing standards and judging ideas to verify their rationality (Flynn, 1989). Abd Kadir, Subki, Jamal, and Ismail (2014) have also determined that the critical reading skill should be taught in order to better develop learners' critical thinking skills.

Based on the critical reading skill process, various critical skills were classified by many researchers. The main critical reading skills were determined to be higher-order thinking skills, i.e., analyzing, synthesizing and evaluation (Flynn, 1989). Whereas, Abdullah (1998) classified the critical reading sub-skills, from simplest to most difficult, as follows: identifying similarities and differences, evaluating inductive inferences, distinguishing between facts and opinions, evaluating generalization and strengths of arguments, identifying biased statements, author's motive, and, finally, recognizing hidden assumptions.

There are many different types of text that critical reading skills can be applied to based on the type of the text, such as political essays, literature, advertisement brochures, or philosophical treatises. Wardeberg (1967) identified two main elements of critical reading. The first one is the habits of judging, valuing, categorizing, discriminating, and the awareness of the uniqueness of communicating, not only through printed texts, but also by means of other forms of media; for instance, television, conversation, or observation. The other element refers to giving the reader more options, judgments, and decisions regarding the written text during the process of reading.

There are a number of benefits to reading a text critically. These advantages enable the critical reader to distinguish between facts and opinions, to read between the lines or look for a deeper meaning, to evaluate a written text, to analyze a text, to criticize, to compare different sources, to reflect, to review, to be flexible, and to think critically and objectively (Kottmeyer, 1944; Schnell, 1978; Taylor, 1983; Hudson, 2007; Abd Kadir, Subki, Jamal, & Ismail, 2014).

2.2 *Graphic Organizers*

GOs were originally known as advanced organizers and structured overviews in the past (Ausubel, 1960). The roots of GOs were based on Ausubel's cognitive theory of meaningful verbal learning. He claimed that students' learning and retention of meaningful materials are enhanced with the help of advanced organizers. By means of advanced organizers, students would have the opportunity to activate their prior knowledge and to relate that knowledge to new knowledge in a more fashionable and meaningful way. Since then, Ausubel's advanced organizers have gained the attention of researchers for the ultimate purpose of better developing students' conceptual organization during the pre-reading process (Barron, 1969; Estes, Mills, & Barron, 1969).

Besides Ausubel's cognitive theory of meaningful learning, Anderson and Pearson (1984) claimed that the human mind consists of cognitive structures of knowledge. This knowledge is known as background knowledge (schemata). Schemata Theory entails that, when learners encounter a new piece of information, they try to accept and comprehend it in order to boost the learning process and the retention of that information. They also asserted that the learner must find a "mental home" for the new information given to them by a written text, seeing as learners can modify their existing knowledge to accommodate that new information.

The benefits of utilizing GO strategies are reflected in readers' ability to answer the following reading questions: identifying the main ideas, finding supporting ideas, dealing with vocabulary, differentiating facts from opinions, and making inferences (Sam & Rajan, 2013). Olszak (2014) also identified a number of advantages to applying GO strategies inside the language classroom. Through the reading process, GOs enable readers to differentiate between texts of fiction and nonfiction. They likewise provide readers with tools with which to examine and demonstrate relationships in any given passage. Finally, GOs help readers produce a well-organized summary paragraph.

GO strategies can also enable students to comprehend different types of text, such as exposition. Triwanada and Appl (2016) identified the numerous advantages of utilizing GO strategies for teaching

expository texts: viz. they can help readers fully understand the content of a text they also can remind the readers of what they already know, or need to know, about the topic, and they can motivate readers to read reports. Hall and Strangman (2002) differentiated between the various GOs. Each model is designed to suit a particular type of information throughout the reading process. They explained each type as follow:

- 1) **A Descriptive or Thematic Map:** “it works well for mapping generic information” (p. 2).
- 2) **A Network Tree:** “it works for organizing a hierarchical set of information” (p. 2).
- 3) **A Spider Map:** “it works when the information relating to a main idea or theme does not fit into a hierarchy” (p. 2).

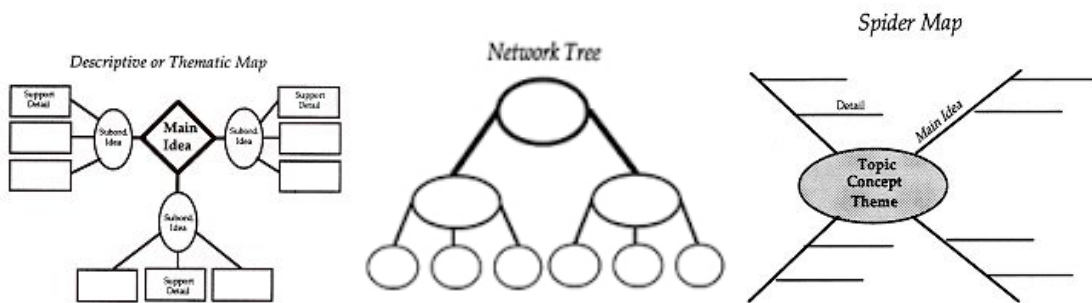


Figure 1. Descriptive or Thematic Map **Figure 2. Network Tree** **Figure 3. Spider Map**

- 4) **A Problem and Solution Map:** “it works when information contains cause and effect problems and solutions” (p. 3).
- 5) **A Problem-Solution Outline:** “it helps students to compare different solutions to a problem” (p. 3).
- 6) **A Fishbone Map:** “it is useful when cause-effect relationships are complex and non-redundant” (p. 3).

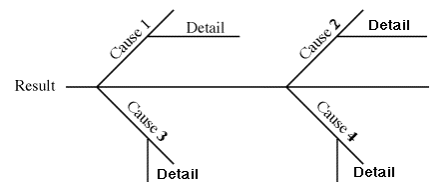
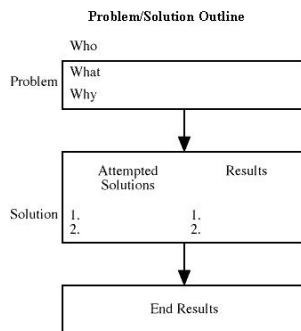
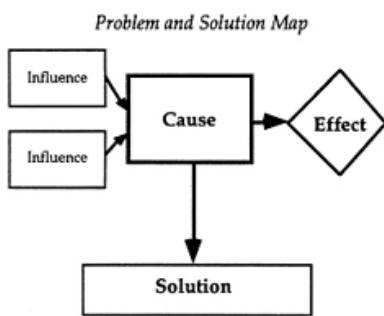
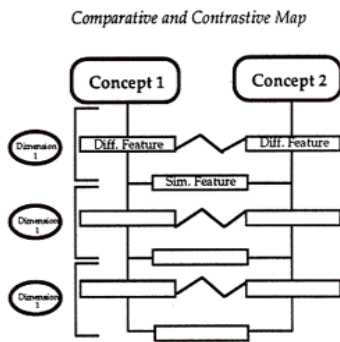


Figure 4. Problem and Solution Map

Figure 5. Problem/Solution Outline

Figure 6. Fishbone Map

- 7) **A Comparative and Contrastive Map:** “it can help students to compare and contrast two concepts according to their features” (p. 4).
- 8) **A Compare-Contrast Matrix:** “is responsible for comparing concepts’ attributes” (p. 4).
- 9) **A Sequential Episodic Map:** “is used for mapping cause and effect” (p. 4).



Compare/Contrast Matrix

	Name 1	Name 2
Attribute 1		
Attribute 1		
Attribute 1		

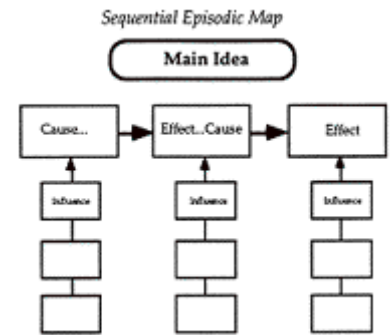


Figure 7. Comparative and Contrastive Map

Figure 8. Compare/Contrast Matrix

Figure 9. Sequential Episodic Map

- 10) **A Continuum Scale:** “is effective for organizing information along a dimension such as less to more, low to high, and few to many” (p. 5).

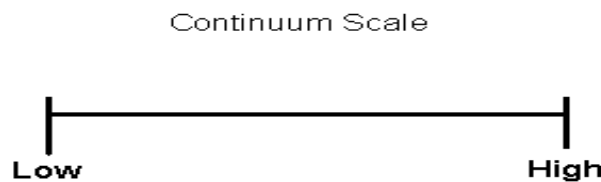


Figure 10. Continuum Scale

- 11) **A Series of Events Chain:** “it can help students organize information according to various steps or stages” (p. 5).
- 12) **A Cycle Map:** “it is useful for organizing information that is circular or cyclical, with no absolute beginning or ending” (p. 5).
- 13) **A Human Interaction Outline:** “it is effective for organizing events in terms of a chain of action and reaction” (p. 5).

Series of Events Chain

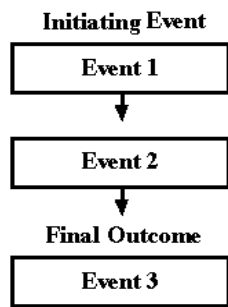


Figure 11. Series of Events Chain

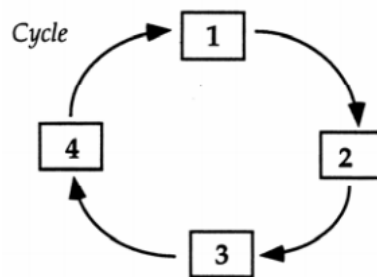


Figure 12. Cycle Map

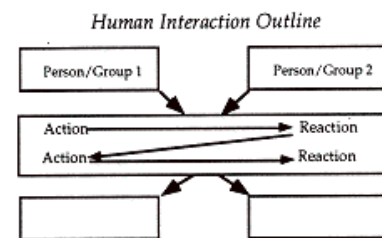


Figure 13. Human Interaction Outline

Other types of GO were introduced by other researchers. For example, Gallavan and Kottler (2007) established eight types of GO according to their learning purposes; “assume and anticipate, position and pattern, group and organize, compare and contrast, relate and reason, identify and imagine, estimate and evaluate, and combine and create” (pp. 118-119). Each one of these has its own strengths for fitting different types of text. It is then the teacher’s role to look for new vocabulary in the text or during discussion and to add new words to the selected organizer.

It seems that GOs are flexible strategies since teachers have the opportunity to utilize them in the language classroom in a way which maximizes their effectiveness. In order to accomplish that, the Hong Kong Curriculum Development Institute (2001) recommended a number of systematic steps for the implementation of such strategies.

First, teachers should familiarize themselves with different types of graphic organizers. Second, teachers can describe to their students what the graphic organizer[s] are and their benefits in learning. Third, teachers can present the selected graphic organizer for the topic, and point out the topic and the organizational framework. Fourth, teachers should also use some examples to illustrate the use of some graphic organizers. Fifth, teachers can assign the suitable one for the language classroom. Finally, teachers then review students’ work and generate a discussion on the effective use of graphic organizers. (p. 9)

Kabilan (2000) stated that critical thinking skills could play a big role in helping students to become proficient in acquiring a foreign language. Therefore, the researchers urge EFL teachers to pay attention to critical reading activities in their classrooms. They should also design or adapt proper reading activities that enable the learners to use their higher thinking skills. Moreover, it is necessary to thoroughly study the different ways of developing thinking skills so that English learners may better cope with the expansion of their knowledge so as to better develop their academic achievement.

2.3 Empirical Research

This section reviews the empirical studies related to the current study. It thus includes studies on the effect of GOs on students' reading comprehension skills, as well as studies which focus on critical reading skills in particular.

2.4 Graphic Organizers and Reading Comprehension

Chiang (2005) examined the effect of using GOs on the reading comprehension achievement of Taiwanese EFL college students and their attitudes towards reading in English. The sample consisted of 50 tertiary level freshmen from a medical college in South Taiwan. To gather their data, the researcher used pre- and post-reading comprehension tests, two attitudes questionnaires, and group interviews. The findings indicated that the use of GOs in teaching reading skills has a positive effect on both reading comprehension tests and attitudes towards EFL reading texts.

Another study by Miranda (2011) investigated the effect of using GOs on the reading comprehension of English language learners with learning disabilities. The case study sample consisted of 3 students; one female EFL middle school student with learning disabilities and two male EFL public middle school students without learning disabilities. To collect the data, the researcher used pre- and post-reading comprehension achievement tests. The findings revealed that GO strategies not only have positive effects on the reading comprehension skills of EFL learners without learning disabilities but also on EFL learners with learning disabilities.

Öztürk (2012) investigated the effect of GOs on the reading comprehension achievements of Turkish EFL university students. The sample of the study consisted of 50 students. It was divided into two equally numbered experimental and control groups. Pre- and post-tests were used on both groups to collect the data. The results revealed that the introduction of GO instruction contributed significantly to EFL learners' comprehension of reading materials in English.

Biria and Sharifi (2013) examined the effectiveness of GOs on Iranian EFL university students' reading comprehension abilities as well. The sample of their study consisted of 60 students and was divided into equally numbered experimental and control groups. To collect their data, pre- and post-tests were utilized on both groups. The results revealed that the GOs contributed significantly toward the development of their reading comprehension abilities.

Sam and Rajan (2013) studied the effect of using GOs on the reading comprehension skills of middle school ESL students. The sample of their study consisted of 35 ESL students. Their sample was divided into two equally numbered groups (experimental, control). The researchers used pre- and post-tests to collect the data. Their results showed that instruction with GOs contributed significantly to the experimental group's reading comprehension achievements in terms of their ability to identify main ideas, find supporting details, deal effectively with new vocabulary, differentiate between fact and opinion, and making inferences.

Likewise, Mahmood, Nikoo and Bonyadi (2013) explored the role of GOs and background activation on Iranian EFL learners' reading comprehension achievement. The sample of the study consisted of 36

female EFL learners at intermediate level and was divided into three groups; the first group was taught reading by using GOs strategies; the second group was taught reading by activating background knowledge; and the third group was taught using the traditional method. To collect the data, the researchers conducted both pre- and post-tests. The results indicated that using GO strategies and the activation of schemata played a significant role in developing EFL learners' reading comprehension abilities.

In addition, Purwaningsih (2013) investigated the effect of GOs on students' reading comprehension at State Junior High School 15 Yogyakarta. The sample of the study consisted of 80 students. In order to collect both quantitative and qualitative data, the researcher used observation guidelines, interviews, and pre- and post-reading comprehension tests. The results showed that GOs could develop students' reading comprehension abilities.

Toha (2013) examined the influence of using GOs on ESL students' text comprehension. Their sample consisted of 30 students selected from SMK Gudang Rasau in Kuantan Pahang. These students were divided into two groups: an experimental and a controlled group. To collect the data, the researcher designed pre- and post-tests and an interview. The results showed that using GOs with the help of reading texts has improved students' skills slightly and has had a positive influence on their reading comprehension abilities.

Humbert (2014) investigated which type of GOs (Venn diagram VS concept map) was more effective for the purpose of enhancing the achievements made on reading comprehension tests. The sample included only two students. To collect the data, the researcher conducted a pre-test, as well as a post-test after four weeks of treatment. The results revealed that Venn diagrams and concept maps contributed significantly to the enhancement of students' reading comprehension achievement test scores.

Almaahi (2015) examined the effectiveness of using GOs on EFL students' text structure awareness and reading comprehension. The sample of the study consisted of 235 English major students and were divided into experimental and controlled groups. To collect the data, the researcher used two tools: viz. a questionnaire to measure the experimental group members' impression about GO instruction, as well as pre- and post-tests. The findings demonstrated that the students had a positive attitude towards GO instruction and contributed significantly to improving students' reading abilities.

Putranti (2016) investigated the effect of using GOs on the students' reading comprehension at SMP Negeri 1 Berbah (i.e., a middle school in Indonesia). The study's sample included all students of grade VIIID. To collect the data, the researcher used the following tools: classroom observations, student interviews, teacher interviews, a questionnaire, and pre- and post-tests. The findings revealed that GOs contributed dramatically to students' reading comprehension abilities.

Yusuf and Dzulkafly (2017) examined the effect that GOs have on facilitating reading comprehension amongst ESL students. The sample of the study consisted of 78 students from different academic backgrounds and proficiency levels. The same was divided into control and experimental groups. To

collect their data, both researchers used two research tools: viz. a pre- and post-teaching questionnaire, as well as pre- and post-reading comprehension tests. The results revealed that using GOs played a significant role in the development of ESL learners' reading comprehension abilities.

2.5 Studies on Critical Reading

El-Maleh (2006) examined the effectiveness of administering a proposed Literature Circles (LC) program on developing the needed critical reading skills regarding the English short stories component of first year, secondary stage students. It also aimed to identify LC students' satisfaction/dissatisfaction towards utilizing the proposed LC program. For the purpose of collecting the data for the study, the researchers administered four main tools: a critical reading skills questionnaire, pre- and post-critical reading skills tests, an LC student's satisfaction/dissatisfaction questionnaire, a teacher's guide questionnaire, and the proposed LC teacher's guide itself. The sample of the study included 99 female students of the first year, secondary stage at El-Arish secondary school. The findings identified eight critical reading skills which were required for the first year, secondary stage. There were statistically significant effects in the post-administration of the critical reading skills test in general in favor of LC experimental group. Both groups showed satisfaction towards being taught the proposed LC program.

Al-Oqaili (2007) evaluated the level of critical reading skills among undergraduate EFL Jordanian students. That study also investigated the effects of gender and year of study on students' critical reading abilities. The sample of the study included 196 EFL undergraduate students at Yarmouk University. In addition, critical reading test was used to measure students' critical reading abilities of annotating, previewing, outlining, taking inventory, summarizing and analyzing. The results showed that students' performance on critical reading skills was low, with female students being ahead of male students and senior students being ahead of freshmen students.

Belet and Dal (2010) studied primary education pre-service teachers' opinions about the use of storytelling to develop primary school students' critical reading skills. The sample of the study consisted of 53 pre-service Turkish teachers. The data was collected by means of an open-ended questionnaire. The findings showed that pre-service teachers had positive opinions towards the skills explained in the literature within the context of critical reading.

Another study by Khodadady (2011) examined the effect of using concept mapping on EFL students' critical thinking skills. The study's sample consisted of 36 upper intermediate and advanced EFL learners, which were then divided into two groups: viz. experimental and controlled groups. To gather the data, the researcher designed a pre-/post-test which was then used on both groups. The findings indicated that using the concept mapping strategy contributed significantly towards the development EFL learners' critical thinking skills.

Fahim, Barjesteh and Vaseghi (2012) investigated the effect of critical thinking strategies training on the reading comprehension of Iranian EFL students. Their sample included 240 male and female Iranian EFL students. Reading comprehension and language proficiency tests were utilized. The

findings showed that critical thinking skills significantly affected EFL learners' reading comprehension performance.

Also, Alslaiti and Mgdadi (2012) investigated the effect of a functionally-based instructional program on improving tenth grade students' critical reading skills. Both researchers designed a functionally-based instructional program. A test consisting of 12 multiple choice items measured the students' critical reading levels. The sample of the study consisted of 56 students from Beit Yafa secondary school. The findings showed that there were statistically significant differences in the critical reading tests due to the method of instruction. They finally concluded in favor of the experimental group.

Abdulrasoul (2014) examined the effect of using reading circles on developing preparatory students' critical and social skills. The sample of the study was 44 students from a language school at preparatory level. To collect the data, the researcher utilized a critical reading test, a social skills questionnaire, and a student's reflection log. The results revealed that the reading circles strategy improved students' performance in critical reading skills.

Alyaseen (2016) investigated the effect of the K.W.L strategy on improving critical reading and creative writing skills among eighth grade female students in Jordan. The sample consisted of 53 female students from two classes at Kiiitm Secondary School. To collect the data, the researcher designed a pre-/post-critical reading test. The results showed that there are statistical differences between the means scores of the two groups in all critical reading skills. The post-test confirmed that teaching strategies have an effect on experimental groups.

Furthermore, Al-Shabatat (2017) examined the effect of questioning strategies on Jordanian female ninth grade students' critical reading skills. The sample was 85 female ninth-grade students at Al-Qaser Directorate schools. To collect their data, the researcher designed two tools: a critical reading test and a semi-structured interview. The results showed that there were statistically significant differences between the control and experimental groups in favor of the experimental group.

2.6 Summary

Previous research examined a variety of issues with regard to GO strategies' effect on critical reading skills. All of the surveyed empirical research concluded GOs effectively contributed to the improvement of students' reading skills (e.g., Chiang, 2005; Miranda, 2011; Ozturk, 2012; Biriya & Sharifi, 2013; Sam & Rajan, 2013; Purwaningsih, 2013; Mahmood, Niko, & Bonyadi, 2013; Toha, 2013; Humbert, 2014; Almaahi, 2015; Putrani, 2016; Yusuf & Dzulkafy, 2017).

Furthermore, the studies which were conducted specifically on critical reading skills showed that instructional programs had a positive effect on students' overall critical reading skills (e.g., Amro, 2004; El-Maleh, 2006, Al-Oqaili, 2007; Belet & Dal, 2010; Khoday, 2011; Fahim, Barjesteh, & Vaseghi, 2012; Abdulrasoul, 2014; Al-husband, 2017; Al-Shabatat, 2017; Alqatanani, 2017).

The current study, on the other hand, investigated to what extent an instructional program centered around GOs affected the critical reading skills of male EFL students attending the Al-Jouf College of

Technology in Saudi Arabia. This study is different from previous studies in the sense that it focuses on the critical reading skills of EFL learners and localizes it in the Saudi context. Moreover, as according to the researcher's best knowledge, no research like the present research has been carried out in the past for the purpose of examining how effective an instructional program based upon GO strategies is on critical reading skills in the context of EFL. Consequently, the researcher hopes that the current study will be significant in the TEFL field and will be the first of its kind, both locally and globally.

3. Method and Procedures

3.1 Design

The current study followed a quasi-experimental design in terms of its using one experimental and one control group. In addition, the study has one independent variable (GO strategies) and one dependent variable (students' performance in critical reading tests).

3.2 Participants of the Study

The participants of the study were chosen conveniently as feasible to the researcher. The participants consisted of 43 EFL freshmen students attending Al-Jouf Technology College. They were assigned into two groups, with twenty-two students comprising the experimental group and twenty-one students comprising the control group (See Table 1). Both groups were subjected to pre- and post-test for the purpose of assessing their critical reading skills. The experimental group was taught by the researcher himself by means of GO strategies. The controlled group, on the other hand, was taught by another EFL teacher based on the guidelines of the teacher's book.

Table 1. The Total Number of Participants in the Study

Participants of the study	N
Experimental Group	22
Control Group	21
Total	43

3.3 Equivalence of the Groups of the Study

To ensure the equivalence of both the control and experimental groups, the means and standard deviations of the critical reading skills pre-test were calculated as shown in Table 2.

Table 2. Means and Standard Deviations of the Critical Reading Pre-Test for both the Control and Experimental Groups

	Group	N	Mean	Std. Deviation	T	sig
Analysis pre	Experimental Group	22	3.73	.550	3.721	0.001
	Control Group	21	2.71	1.146		
Problem-Solving pre	Experimental Group	22	4.73	.985	3.948	0.000
	Control Group	21	3.14	1.590		
Evaluation pre	Experimental Group	22	4.55	1.405	2.790	0.008
	Control Group	21	3.43	1.207		
Summarizing pre	Experimental Group	22	3.45	.596	2.064	0.045
	Control Group	21	2.90	1.091		
Total of Critical Reading Pre-Test	Experimental Group	22	16.45	1.969	5.144	0.000
	Control Group	21	12.19	3.326		

Table 2 shows observed differences between the mean scores of the control and the experimental groups on the four components of the critical reading skills pre-test. The total mean score of the pre-test for the experimental group was 16.45; while the total mean score of the pre-test for the control group was 12.19. Thus, the researcher used the ANCOVA and MANCOVA tests to ensure the equivalence of the two groups.

3.4 The Instructional Material

The instructional material used in this study was based on the reading texts from the student's book and workbook of *Flying High for Saudi Arabia 4*, which were redesigned by the researcher. The texts were written by using different GO strategies (namely, Venn diagram, KWL chart, concept mapping, fishbone diagram, and circle map) for the purpose of better enabling students to read critically.

3.5 The Instructional Program

In order to achieve the purpose of the study, the researcher adapted the instructional program developed by Alqatanani (2017). The researcher also redesigned reading texts in a way to accommodate GO strategies. The program aimed at offering students a practical opportunity for utilizing GO strategies during reading lessons.

The program includes five GO diagrams: Venn diagram, KWL chart, concept mapping, fishbone diagram, and circle map. These GOs were distributed throughout an eight-week period to two classes per week. Each GO was designed for specific critical reading sub-skills. For example, concept mapping was used to differentiate between facts and opinions, while the circle map was used to write synonyms and antonyms for chosen words.

3.6 Content Validity of the Instructional Program

For the purpose of validating the instructional program, a jury of ten EFL university professors, English supervisors, and English Language teachers from Saudi Arabia were kindly requested to judge and determine whether the reading texts were suitable for the target students' level and whether the critical reading skills to be tested were appropriate. They suggested that the program should be implemented in eight weeks instead of six. All of their comments and recommendations for the program were taken into account and were reflected in the final version.

3.7 Objectives of the Program

By the end of the program, the student will be able to:

- 1). Utilize different types of GO, such as Venn diagram, circle map, KWL chart, concept mapping, and fishbone diagram, with different types of reading text;
- 2). Develop their own GO to better understand the reading text in question;
- 3). Read English passages critically, such as analyzing abstract concepts, differentiate between facts and opinions, skim for main ideas, distinguish main ideas from specific details, etc.

3.8 Duration of the Program

The training program lasted for 8 weeks and was given in 45-minute lesson frames for each group.

3.9 Implementation of the Instructional Program

Before implementing the program, the researcher explained the nature of the program and its outcomes to the students in Arabic. He then emphasized the significance of learning GO strategies since they may develop their critical reading skills and help them to obtain better achievement of the English language. The researcher asked some students about their past experiences in reading English and whether they used any GO strategies before. They explained that they used to have many problems which prevented them from answering and comprehending the reading text. To teach them GO strategies, the researcher followed these procedures:

- 1) Introducing the strategy: The researcher defined it, mentioned its aims and uses.
- 2) Modeling its use: The researcher modeled the strategies and explained to the students how to use them and draws the maps for them to imitate or by explaining graphic organizers strategies to show the students how to use them during the reading lesson.
- 3) Practicing: The researcher requested from the students to use the graphic organizers strategy based on the assigned critical or creative reading skills to read and answer the given questions.

- 4) Providing feedback: the researcher helped students to find out the difficulties they face and provided them with the appropriate feedback.

3.10 Tool of the Study

To successfully achieve the aim of this study, the following tool was developed and employed:

3.11 Critical Reading Test

The researcher designed a pre-/post-critical reading test. The test measured the following critical reading sub-skills: namely, that of differentiating between fact and opinion; that of differentiating between main and supporting ideas; that of anticipating what will be read; and that of demonstrating knowledge of vocabulary. The test was constructed based on reviewing previous studies concerning critical reading tests (e.g., Abdulrasoul, 2104; Alqantanani, 2017; Al-Shabatat, 2017). The test included a passage which was adopted from the student's book, *Flying High for Saudi Arabia 4*, followed by a number of multiple choice questions which tested the aforementioned critical reading sub-skills.

3.12 Content Validity of the Pre- and Post-Critical Reading Skills Test

To ensure the content validity of the critical reading test, it was given to a jury of ten EFL university professors, English supervisors, and English Language teachers from both Saudi Arabia and Jordan. The jury's comments and feedback in terms of the number of questions given and the type of questions asked were all taken into consideration. For example, they suggested to rewrite the first behavioral indicators of the analysis skill (i.e., analyze the sentence that shows either facts or opinions from the reading text). They also recommended replacing behavioral indicators, such as *analyzing the character's traits of the passage*, with *extracting motives of characters in a text*.

3.13 Construct Validity of the Critical Reading Skills Test

To ensure the construct validity of the critical reading skills test, the test was piloted randomly on a sample of 20 students who did not belong to the participants of the study. The difficulty and discrimination factors were calculated for the critical reading skills test so as to discover the items which were either too difficult or too easy for the students, along with items that students were not able to discriminate, as presented in Table 3:

Table 3. Difficulty and Discrimination Factors for the Critical Reading Skills Test

Item	Difficulty	Discrimination	Item	Difficulty	Discrimination
Number	Factor	Factor	Number	Factor	Factor
1	0.57	0.75	10	0.43	0.47
2	0.63	0.38	11	0.33	0.50
3	0.60	0.75	12	0.57	0.47

4	43.0	0.47	13	0.57	0.68
5	70.4	0.53	14	0.57	0.75
6	0.50	0.33	15	0.63	0.38
7	0.47	0.40	16	0.60	0.75
8	0.37	0.33	17	0.33	0.50
9	0.40	0.40	18	0.57	0.47

Table 3 shows that the item difficulty scores factor of the critical reading skills test ranges between 0.33 and 0.60. No item score is higher than 0.85 or lower than 0.2, which reflects the students' ability to answer all of the test items. In addition, the discrimination factor ranges between 0.33 and 0.75, which is higher than 0.2. This indicates that the critical reading skills test is neither easy nor difficult and that the students were able to discriminate the test items.

3.14 Reliability of the Pre- and Post-Critical Reading Skills Test

In order to ensure the reliability of the critical reading test, it was given to a pilot sample which included twenty students who had been excluded from the main study's sample. To make sure of the reliability of the test, it was given to the same pilot study of twenty students two weeks after the pre-test was conducted according to its test and re-test procedures. The researcher used Cronbach's Alpha and Person's Correlation to obtain the reliability coefficient of the test. Its results are presented in Table 4.

Table 4. Coefficients of Internal Consistency of the Critical Reading Skills

Dependent Variable	Cronbach's Alpha	Pearson's Correlation
Analysis	0.78	0.77
Problem-Solving	0.82	0.80
Evaluation	0.81	0.75
Summarizing	0.86	0.79
Total of Critical Reading Skill	0.88	0.86

Table 4 shows the total internal-consistency of the critical reading test for both the Cronbach's Alpha and Pearson's Correlation, with 0.88 and 0.86 respectively. It also shows the internal consistency of each component of the test using the same scales, ranging between 0.78-0.86 and 0.77-0.79, respectively. Therefore, the Cronbach's Alpha and Pearson's Correlation reliability coefficients for the critical reading skills test results were reasonable and reliable for the purpose of this study.

3.15 Teaching the Experimental Group

The teacher taught the treated participants the reading passages by using different GO strategies. For example, the teacher adopted five strategies: namely, Venn diagram, KWL chart, concept mapping, fishbone, and circle map. The circle map utilized is based on the Hong Kong Curriculum Development Institute's Textbook (2001), the KWL chart used was based on Ogle (1986), the concept mapping strategy was based on Harris and Graham (1996), and the fishbone diagram was adopted from Dhandapani (2004).

3.16 Teaching the Control Group

In order to teach the controlled group, another teacher followed the procedures as described in the teacher's guide for *Flying High for Saudi Arabia 4* (Brewster, Daveis, & Rogers, 2016). The steps of teaching reading skills are as follows:

- 1) The teacher will start with a discussion related to the reading text's topic to promote the students' interests and to activate their background knowledge;
- 2) The teacher will have the students read the passage;
- 3) The teacher will direct the students' attention to the questions and have them answer them based on their having read the text briefly;
- 4) The teacher will have the students read the passage again for details in order to check their answers;
- 5) The teacher will finally check the answers with the class.

3.17 Data Analysis

The data was analyzed quantitatively using the Statistical Package for the Social Sciences (SPSS) to determine the potential effect of GO strategies on critical reading skills. The researcher used the following analysis procedures to answer the first question of the study:

- 1) The Cronbach Alpha and Pearson Correlation formulas for the purpose of obtaining an internal-consistency in the critical reading skills test.
- 2) Descriptive statistics to compare the means and standard deviations of the experimental and control groups.
- 3) ANCOVA and MANCOVA to calculate the students' performance by measuring the post-test after excluding the students' scores on the pre-test; then, the adjusted means of the students' performance will be used to measure the post-test, as well as the standard errors of the critical reading skills based on the instructional program.

4. Results

4.1 Results Related to the First Question

The first question of the study was “Are there any statistically significant differences (at $\alpha = 0.05$) on students’ critical reading skills which can be attributed to the teaching method (viz. Graphic Organizers vs. Conventional) which is implemented in the classroom?”

To answer this question, the researcher calculated the mean scores (M) and standard deviations (SD) of the pre- and post-critical reading skills tests for both the experimental and control groups. Table 5 presents those results.

Table 5. Means and Standard Deviations of Students’ Critical Reading Skills Performance in the Pre- and Post-Tests

Group	N	Pre-Test		Post-Test	
		Mean	Std. Deviation	Mean	Std. Deviation
Experimental Group	22	16.45	1.969	31.59	3.26
Control Group	21	12.19	3.326	22.00	4.24

Table 5 shows the mean scores, standard deviations, and the estimate means of the experimental and control groups’ performance on the pre- and post-critical reading skills tests. Moreover, Table 5 reveals that the mean score of the post-test scores for the experimental group ($M = 31.59$) is higher than that of the control group ($M = 22.00$), with standard deviations of 3.26 and 4.24, respectively. Thus, there is a noticeable difference between the scores of the experimental group and the control group in favor of the experimental group. In order to determine whether this difference of means is significant, the researcher utilized a One-Way ANCOVA. Table 6 presents the results of that test.

Table 6. Results of One-Way ANCOVA for Students’ Performance on the Critical Reading Skills Post-Test

Source	Sum of Squares	Df	Mean Square	F	Sig.	Partial Eta Squared
Pre-test	1.444	1	1.444	0.099	0.754	0.002
Group	638.115	1	638.115	43.866	0.000	0.523
Error	581.874	40	14.547			
Corrected Total	1571.628	42				

Table 6 shows a statistically significant difference in students' performance on the critical reading skills post-test ($F = 43.866$, $df = 42$, $P = 0.000$). In light of these scores, this study reports that GO strategies have had a significant difference on the performance of Saudi freshmen students with relation to their critical reading skills (at $\alpha \leq 0.05$).

Accordingly, to determine in favor of which group that difference was to be found in, the researcher calculated the adjusted means scores and standard errors. Table 7 displays those results.

Table 7. Results of the Adjusted Means and Standard Errors in the Post-Test for Both Groups

Group	Mean	Std. Error
Experimental Group	31.73	0.93
Control Group	21.85	0.96

Table 7 reveals that the adjusted mean of the experimental group is 31.73, which is higher than the adjusted mean of the control group (21.85). Thus, this result provides confirmatory evidence for there being a noticeable increase in the post-test means scores for the experimental group with relation to their attainment of critical reading skills.

To examine the differences between the means of both groups in terms of the four critical reading sub-skills for the post-test (analysis, problem solving, evaluation, and summarizing), the researcher calculated the means and standard deviations of these sub-skills. These are presented in Table 8.

Table 8. Means and Standard Deviations of the Critical Reading Skills Pre- and Post-Tests with Relation to the Four Components of the Critical Reading Skills Test

Sub- Skills	Groups	N	Pre-Test		Post-Test	
			Mean	Std. Deviation	Mean	Std. Deviation
Analysis	Experimental Group	22	3.73	0.550	8.73	1.202
	Control Group	21	2.71	1.146	6.00	1.871
Problem-solving	Experimental Group	22	4.73	0.985	7.91	1.065
	Control Group	21	3.14	1.590	5.10	1.758
Evaluation	Experimental Group	22	4.55	1.405	7.50	1.535

	Control Group	21	3.43	1.207	5.48	1.834
Summarizing	Experimental Group	22	3.45	0.596	7.45	1.765
	Control Group	21	2.90	1.091	5.43	1.326

Table 8 shows that the mean scores of the post-test for the experimental group with relation to the four components are higher than those obtained by the control group. Thus, in order to find out whether these differences are statistically significant, a MANCOVA test was used on the critical reading skills scores of the post-test. Those results are illustrated in Table 9.

Table 9. Results of MANCOVA Test on the Post-Test Scores with Relation to the Four Critical Reading Sub-Skills

Source	Dependent Variable	Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared	Wilks' Lambda
Analysis Pre	Analysis post	0.301	1	0.301	0.123	0.728	0.003	1.180
	Problem-solving post	0.194	1	0.194	0.094	0.760	0.003	
	Evaluation post	0.421	1	0.421	0.144	0.707	0.004	
	Summarizing post	8.318	1	8.318	3.398	0.073	0.084	
Problem – solving Pre	Analysis post	0.556	1	0.556	0.228	0.636	0.006	0.822
	Problem-solving post	0.042	1	0.042	0.020	0.887	0.001	
	Evaluation post	6.956	1	6.956	2.375	0.132	0.060	
Evaluation Pre	Summarizing post	3.952	1	3.952	1.614	0.212	0.042	1.501
	Analysis post	7.723	1	7.723	3.166	0.083	0.079	
	Problem-solving post	5.063	1	5.063	2.462	0.125	0.062	
	Evaluation post	0.293	1	0.293	0.100	0.753	0.003	
Summarizing Pre	Summarizing post	0.015	1	0.015	0.006	0.939	0.000	1.239
	Analysis post	0.008	1	0.008	0.003	0.955	0.000	
	Problem-solving post	5.657	1	5.657	2.750	0.106	0.069	
	Evaluation post	2.073	1	2.073	0.708	0.406	0.019	
Group	Summarizing post	2.472	1	2.472	1.010	0.322	0.027	12.542
	Analysis post	63.623	1	63.623	26.083	0.000	0.413	
	Problem-solving post	50.646	1	50.646	24.622	0.000	0.400	
	Evaluation post	17.313	1	17.313	5.911	0.020	0.138	
Error	Summarizing post	33.647	1	33.647	13.742	0.001	0.271	
	Analysis post	90.251	37	2.439				

	Problem-solving post	76.107	37	2.057
	Evaluation post	108.374	37	2.929
	Summarizing post	90.590	37	2.448
	Analysis post	180.279	42	
Corrected Total	Problem-solving post	170.698	42	
	Evaluation post	160.744	42	
	Summarizing post	144.698	42	

It is clear that the calculated value of F (at = 0.05) for the teaching strategy (i.e., GOs) with relation to the four critical reading sub-skills shows that there are statistically significant differences between the two mean scores of the two groups with relation to the four critical reading sub-skills that can be attributed to the teaching strategy.

Consequently, to determine in favor of which group had the most significant difference between their means scores, the researcher calculated the adjusted means scores and the standard errors. Table 10 illustrates these results.

Table 10. Results of the Adjusted Means and Standards Errors in the Post-Test with Relation to the Four Critical Reading Sub-Skills

Critical Reading Sub-Skills	Group	Mean	Std. Error
Analysis post	Experimental Group	8.94	0.39
	Control Group	5.77	0.40
Problem-Solving post	Experimental Group	7.92	0.35
	Control Group	5.09	0.36
Evaluation post	Experimental Group	7.32	0.42
	Control Group	5.66	0.44
Summarizing post	Experimental Group	7.59	0.39
	Control Group	5.28	0.40

Table 10 shows that the adjusted means of the four critical reading sub-skills of the experimental group are higher than those of the control group. These results provide confirmatory evidence that a

noticeable increase occurred in the post-test's means scores in favor of the experimental group with relation to their four critical reading sub-skills.

5. Discussion

This study asked to what extent a GO-based instructional program would have on the critical reading skills of male EFL freshmen students at Al-Jouf College of Technology. The scope of the discussion covered students' achievements in the four critical reading sub-skills (i.e., analysis, problem-solving, evaluation, and summarization). The findings demonstrated that statistically significant differences (at $\alpha = 0.05$) can be attributed to what teaching method is implemented in the classroom, with the results favoring the experimental group as opposed to the control group. This is in line with the conclusions made by the vast majority of the literature. The use of GOs as a means of instruction increases reading comprehension scores in general, let alone critical reading scores in particular. For instance, Khodadady (2011) and Alyaseen (2016) examined whether specific GOs, such as concept mapping and KWL charts, could positively affect critical reading scores specifically, finding that they did. With the present study, on the other hand, one can conclude, based on the evidence, that GOs in general increase critical reading skills and not only the GOs evaluated specifically by Khodadady and Alyaseen.

Based on the statistical results of the questions of this study, it seems that the effect that the instructional program had on GO strategies on Saudi EFL students' critical reading skills successfully increased the students' achievement on their critical reading skills post-test. One possible contributor to the superiority of the GO group was that the instructional program of the current study was purposefully designed and cautiously applied in a classroom setting for the purpose of further developing one of the four main skills in the field of EFL: i.e., the reading skill. The instructional program also includes a variety of GOs (e.g., concept mapping, Venn diagram, fishbone diagram, KWL chart, and circle mapping)—all of which were carefully applied during reading lessons in order to motivate and encourage students to think critically. These GOs were presented in an easy and organized way, thereby making their applications meaningful and systematic inside the classroom setting. It was in this regard that Fly, Jean, and Hunter (1988) stated that GOs can be effective and maximize students' reading comprehension as long as they are applied properly and systematically inside the classroom setting by EFL teachers.

The researcher also took the individual differences of the students into consideration when applying this instructional program. Individual, pair, and group work were all implemented for the purpose of meeting students' interests and needs. For example, in the first lesson (i.e., concept mapping organizer), the students were first asked to read the passage individually and highlight the factual and opinion sentences. Then, they were asked to work in pairs to check and discuss their answers. After that, they extended their discussions and answers in groups. Finally, they were asked to compare their answers with other groups in the classroom. Such procedures motivated the students to read and think both effectively and critically during the process of reading.

In the beginning, it seemed that the students were not familiar with GOs and that they did not know how to use them whilst reading. Once they listened to the instructions given to them as to how they were to best utilize the GOs, they were able to comprehend their implementation inside the classroom. Eventually, the students realized the importance and significance of using GOs in teaching reading skills, thereby enabling them to organize their thoughts and think critically. This claim mirrors what Sam and Rajan (2013) mentioned in their study about how GOs in the language classroom can help learners develop their reading comprehension skills, as well as developing their critical thinking skills so that they may better understand and construct meaning from the passages given them by dividing them into smaller, more understandable sentences. They can also serve as visual representations of ideas and thoughts by helping learners apply their thinking skills in an organized manner (Miller, 2011).

It can also be seen that the GOs created more relaxing learning environment. This means that the instructional program also increased the interaction between the teacher and his students. It motivates the students to participate as much as they can without worrying of committing mistakes which made them to work collaboratively on each reading task. Hence, this could be another positive factor which made the experimental group outperformed the control group.

Another possible explanation for the outperformance of the GOs group relates to the implementation of the instructional program in facilitating the learning process of the students' reading skills and interacting meaningfully with the context. This explanation is in line with the previous studies such as, Jiang and Grabe (2007), Hall and Strangman (2002), and Miller (2011) have employed GOs to facilitate reading comprehension and make the students to interact meaningfully and active with the text during the ESL reading process.

Another privilege for the students in the experimental Group may be the characteristic features of some GOs such as, concept mapping, Venn diagram, and circle map. One of these features enables the readers to visualize the reading text explicitly (Toha, 2013). Thus, these GOs might help the readers to comprehend and understand the components of the text more deeply.

Moreover, Cleveland (2014) stated that GOs could have a significant effect on enhancing the students' critical thinking skills (e.g., evaluating, analyzing, synthesizing ... etc.). To illustrate, as found in the present study, the students started to show a significant improvement in their critical thinking skills during the training program. The participants of the study were able to differentiate between the facts and opinions, identify the main and the supporting ideas from the reading texts. They also were able to state their opinions and view openly by making judgment on what they read. Thus, this revealed that GOs not only improved the learners' higher critical thinking skills, but also their confidence when expressing their opinions and what they think about they read.

Although the experimental group was not given any kind of questionnaire asking their attitudes towards the instructional program, the researcher who was the instructor observed that the students had positive attitude towards EFL reading skill. They started to gain more confidence while reading and get more

motivated to participate. They also know to identify the main and the supporting ideas of the reading text, and summarize the important ideas and put them in an organized manner. Such observations are in line with the results of previous studies such as (Chiang, 2005; Mede, 2010; Ozturk, 2012).

It is worth mentioning that implementing GOs inside the classroom was not the only thing which created a positive learning environment, but also the fact that the researcher incorporated the use of collaborative work, authentic learning materials, data shows, visualizers and smart boards. The researcher also tried to reduce his teacher talk time during his reading lessons, focusing instead on increasing student talk time in order to give students more opportunities to critically discuss the passages together. These could be other possible factors which made the experimental group outperform the control group.

Consequently, the results of this study are in line with some views of related literature and researcher findings concerning the effect of GOs on EFL reading comprehension skills. For example, Chiang (2005), Miranda (2011), Ozturk (2012), Biri and Sharifi (2013), and Sam and Rajan (2013) concluded that the use of GOs in teaching reading comprehension had a positive effect on their experimental group, thereby enabling them to differentiate between facts and opinions, as well as to identify the main and supporting ideas from the reading passage given them. Mahmood, Nikoo and Bonyadi (2013) also proved that the role of GOs played a significant role in developing Iranian EFL learners' reading comprehension abilities. Indeed, Purwaningsih (2013), Toha (2013), Humber (201), Almaahi (2015), Putrani (2016), Yusuf and Dzulkafly (2017), and Fraihat (2018) also recently reported that GOs had significantly contributed to the improvement of EFL students' reading comprehension skills. Moreover, the findings of the following studies (i.e., Mro, 2004; El-Maleh, 2006; Al-Oqaili, 2007; Belet & Dal, 2010; Khodaday, 2011; Fahim, Barjesteh, & Vaseghi, 2012; Abdulrasoul, 2014; Al-husband, 2017; Al-Shabatat, 2017; Alqatanani, 2017) showed a positive effect on the critical reading skills by utilizing different reading strategies. Therefore, based on these findings, critical reading skills could be positively affected by using proper GOs.

6. Conclusion

In the past, several studies were conducted with regards to how the use of GOs in the ELT classroom contributes to the performance of students on tests which assess their reading comprehension skills. In general, they find that GOs improve reading comprehension skills and they strongly encourage their use. There have also been a number of studies which examine how different teaching methodologies may enhance critical reading skills in particular. At least three of those studies evaluated how particular GOs affect the critical reading skills of students. Recognizing these trends in the literature, the researcher wished to test whether these conclusions could be generalizable to a number of different GOs vis-à-vis the examination of just one GO in particular. Thus, the researcher tested that hypothesis by developing a study which would evaluate to what extent GOs in general affected Saudi students' performance on a critical reading skills test. In order to accomplish that goal, the researcher developed

the present study. This study's sample consisted of 43 freshmen male Saudi students, all of whom attended the College of Technology of Al-Jouf. The sample was divided into a control and an experimental group, with 22 being assigned to the former and 21 being assigned to the latter. Whereas the control group was taught in the more traditional manner (i.e., based on the teacher's book of the assigned textbook), the experimental group was treated with an instructional program which centered around graphic organizers (specifically, circle map, concept mapping, fishbone diagram, KWL chart, and Venn diagram). The study lasted for eight weeks and was evaluated using a pre-validated tool (i.e., pre- and post-tests developed for the purpose of evaluating critical reading skills). The discussed results of the current study showed that using GOs contributed significantly to the development of the critical reading skills of EFL Saudi students as compared to the more conventional methodologies as prescribed in teacher's books. Thus, the researcher believes that applying GOs properly while inside the classroom had a positive effect on improving EFL students' performance on the critical reading skills post-test.

7. Recommendations of the Study

Based on the findings of the study, the researcher presented a number of recommendations that should be taken into consideration:

- 1) Researchers are recommended to conduct other studies to investigate the effect of GO strategies on developing other language skills over a longer period of time across a wider population of EFL students in Saudi Arabia and to compare their findings with the findings of the current study.
- 2) A similar study should be conducted to investigate the effect of GO strategies on the critical reading skills demonstrated by others with different levels of English attainment in other parts of the Kingdom of Saudi Arabia.
- 3) The current study has dealt with a sample of Saudi male students and proved that GOs developed students' levels of critical reading skills. Future research, however, needs to investigate the effect of such strategies on the teaching of female students in Saudi Arabia.
- 4) EFL teachers should not adhere 100% to their English textbooks whilst teaching their reading lessons. They should instead make use of other learning resources, such as GOs, so as to develop EFL students' reading skills.

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