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HOW

Enhancing Reading Skills through Scaffolding Strategies in Eighth-Grade EFL Students

Mejorando la Competencia Lectora a través de Estrategias de Andamiaje en Estudiantes de Octavo Grado de ILE

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Abstract

This research focuses on how designing, implementing, and evaluating didactic strategies and activities based on scaffolding with visualization and the use of graphic organizers guide the process of reading comprehension in an eighth-grade public school course placed at A1 level. The research methodology was framed as action research with a mixed-method approach and a quasi-experimental design with no control group. There were 31 participants aged 12 to 18. The research design implied (1) a pretest, (2) a diagnostic analysis, (3) intervention, (4) a posttest, and (5) final analysis. After gathering information from the pretest initial diagnostic data, the pedagogical intervention with ten task-like scaffolding activities was applied and assessed with rubrics. Posttest data were collected and accounted for from the researcher's journal notes. Both reading comprehension tests, the pretest, and the posttest had 21 questions divided into literal, inferential, and evaluative levels. Results obtained using descriptive statistics exposed, from the posttest, some improvement in the literal and evaluative level questions but a slight decline in inferential level questions contrasted with the pretest results. Data demonstrated that some external factors like time, academic aids, and responsibility influenced the outcome positively or negatively.

Keywords: graphic, organizer, quasi-experiment, reading, scaffolding, strategy, visualization

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Resumen

Esta investigación se enfoca en cómo el diseño, la implementación y evaluación de estrategias y actividades didácticas basadas en el andamiaje con visualización y organizadores gráficos orientan el proceso de comprensión lectora en un curso de octavo grado de una escuela pública de nivel A1. La metodología se enmarcó en la investigación acción con un enfoque mixto y un diseño cuasiexperimental sin grupo de control. Hubo 31 participantes de 12 a 18 años. El diseño de la investigación implicó 1) un pretest, 2) un análisis de diagnóstico, 3) una intervención, 4) un post test y 5) un análisis final. Después de recopilar los datos de diagnóstico del pretest, se implementó la intervención pedagógica con diez actividades de andamiaje tipo tarea y se evaluó mediante el uso de rúbricas. Se recopilaron los datos del post test y, la triangulación de datos también tuvo en cuenta las notas del diario de campo. Ambas pruebas de comprensión lectora, el pretest y el post test contaban con 21 preguntas divididas en niveles literal, inferencial y crítico. Los resultados obtenidos mediante estadística descriptiva mostraron cierta mejora en el post test en las preguntas de nivel literal y crítico pero una ligera desmejora en las preguntas de nivel inferencial contrastados con los resultados del pretest. Los datos demostraron que algunos factores externos como el tiempo, las ayudas académicas y la responsabilidad influyeron positiva o negativamente en el resultado.

Palabras clave: lectura, estrategia, andamiaje, visualización, gráfico, organizador, cuasiexperimental

Introduction

This paper shares the experience and results of developing action research at a public school with EFL students in Galeras, Sucre state, Colombia. The school faces significant challenges in improving their reading skills. The students are beginners in English language learning at an A1 level. The context presents a lack of appropriate academic and technological resources and insufficient parental support.

The primary issue is the students' difficulty in comprehending English texts, which is a crucial skill for their academic progress and future opportunities, in other words, they must succeed in the academic world. Reading is a vital receptive skill that will complement other skills like writing or listening directly or indirectly. Nunan (1999) claims that "unlike speaking, reading is not something that every individual learns to do" (p. 249), which means that it must be instructed and seriously taught. In addition, results of standardized tests like Saber 11, a high school exit exam administered in grade 11 -comparable to the SAT and ACT exams in the United States-, show a consistent and repetitive weakness in reading comprehension levels in English.

The problem is exacerbated by the lack of effective teaching strategies and resources that cater to the specific needs of EFL students in this context, that is why developing strategies that help learners understand what they read based on a scaffold, a supporting structure that utilizes numerous means, intends to tackle deficiencies in reading. Scaffolding strategies are effective in enhancing reading comprehension among EFL students instructional scaffolding

strategies are not an element of novelty in research and academic fields; they have displayed satisfactory results and demonstrated other beneficial features like effectiveness, easiness of implementation, and time-saving since these strategies involve breaking down learning into manageable steps, providing necessary assistance at each step, and gradually reducing the level of support as students master the learning. This process paves their learning as a supporting tool to gain skillfulness in reading in another language.

Walqui (2006) declares that, "scaffolding makes it possible to provide academically challenging instruction for ELLs (English language learners) in secondary schools" (p. 177), which indicates that scaffolding is useful for helping English language learners get properly taught at this level of education and with a defying task as improving reading. Besides, "well-constructed scaffolds optimize students learning, provide a supportive environment as well as it facilitates student independence" (Salem, 2017, p. 98); thus, these types of activities and strategies may support, sustain, and lead a process of enhancement of reading skills in English for the context, population, and situation that is intended.

This research is of critical importance, as it seeks to address a pressing educational issue in a context where students are already disadvantaged. By developing and testing new strategies and activities, this research could provide valuable insights and practical solutions that could be applied in similar contexts elsewhere. Therefore, this action research aims to design, implement, and evaluate scaffolding strategies and reading activities to improve the reading skills of eighth-grade EFL students in this context.

Theoretical Framework

This research is essential to define and lean on numerous terms like reading, a receptive skill that offers "input" or information to the individual. Reading is "a subtle and complex process that involves sensation, perception, comprehension, application and integration" (Bolain, 2008, as cited in Al Aila, 2015, p. 33). It is in fact, a multistep process that starts by simply observing and ends up in comprehending and responding effectively. In such a process, the meaning is the inner core.

The previous definition conveys that reading is a complex process that involves observation, interpretation, and cognition to get meaning from symbols. Grabe and Stoller (2013) add that reading requires considerable cognitive effort; therefore, it can be considered an achievement regardless it is done in the mother tongue or a foreign language. Reading skills have a wide scope of influence; several tasks can be achieved during the reading process if the learner is trained sufficiently. As with any other ability involving a complex series of actions, reading is susceptible to be honed. As for reading comprehension, Snow (2002) asserts that it is "the process of simultaneously extracting and constructing meaning

through interaction and involvement with written language" (p. 11). She states that reading has a double purpose, both related to meaning and the decoding of written symbols, where meaning is at the center of it. It can be said then that reading comprehension plays an exquisite role in obtaining knowledge and other language skills in one's native language or a different one like English. Al Aila (2015) sustains that reading proficiency in a foreign language is frequently required for academic accomplishment, career success, and personal growth as it helps expand vocabulary.

One might think that reading is a plain and flatline-shaped exercise that does not demand effort while readers are going deeper into the meaning of the text, but they might be able to perform certain tasks depending on how deep their cognitive skills go. There are different levels of reading comprehension, e.g., literal level, interpretive level, and applied level (Vacca & Vacca, 1986, as cited in Centre for Canadian Language Benchmarks, 2015) or literal level, inferential level, evaluative level, and creative level (Al Aila, 2015).

However, for the present research, it was decided, for practical reasons, to work on only three levels: the literal level (also called factual level), inferential level (or interpretive level), and evaluative level (also called critical level).

Regarding the literal level, it involves understanding the specific information in the text, e.g., comprehending the main ideas, factual details, and stated points of view as well as memory and superficial comprehension (Whitten, 2004). At the inferential level, the reader must go through the text and conclude topics that are not explicitly mentioned. A text can imply certain ideas and concepts that may not be apparent at first glance, so readers must infer them (Victoria State Government, 2018): attaching new learning to old information, making logical leaps and educated guesses, and reading between the lines to determine what is meant by what is written (Whitten, 2004). Finally, the evaluative level demands critical thinking, which requires readers to be analytical, form judgments, recognize points of view, assess the strength of readings and their meanings, and infer reasons (Al Aila, 2015). Evaluative comprehension requires the reader to go further denotation to consider what they think and believe about the message in the text.

To this point, reading has been demonstrated to be a very demanding activity to perform and teach, nevertheless, there are still ways to cope with it using, for instance, a reading comprehension strategy, which is a "cognitive or behavioral action that is enacted under particular contextual conditions, to improve some aspect of comprehension" (McNamara, 2007, p. 6). Actions to be done are directed to reading comprehension enhancement luckily by conscious steps to make sense of text passages. Comprehension then includes the basic idea of making sense using strategies and other factors. Strategies to reach these goals are varied, for example, predicting, inferring, synthesizing, skimming, scanning, re-reading, and sounding out.

Several authors suggest other strategies such as monitoring comprehension, metacognitive analysis, graphic and semantic organizers, answering questions, generating questions, recognizing story structure, summarizing, setting purposes for reading, previewing and predicting, activating prior knowledge, and clarifying; other suggested strategies include fixing, visualizing, drawing inferences, thinking aloud, retelling, mental imagery, text structure awareness, and mnemonic support practice (see Al Aila, 2015). Undoubtedly, numerous strategies are available depending on the purpose of the reading, the user, or how deep the reader or the teacher wants to go on comprehension.

In that context of a multiplicity of strategies, scaffolding appears to complement them since, in education or instruction, it is a good metaphor for supporting students. The term derives from Jerome Bruner's work and was originally meant to offer support by giving learners a framework to build their knowledge, as it is used to support a structure that is being built. In that process, a teacher, a peer, or a competent person assists another person to perform a task beyond their current capability.

Scaffolding can enhance the construction of knowledge and the mastery of new abilities. Clark and Graves (2005) remark that scaffolding is, by far, the most favored, adaptable, and effective teaching strategy that allows learners to understand parts of a task and how they interconnect. It can be said that scaffolding provides learners with academic direction. Walqui (2006) and Salem (2017) point out that scaffolding instruction is beneficial for helping EFL students get better taught and learning optimization. Graves and Fitzgerald (2004) state that scaffolding is flexible, so it can be used before, during, and after any reading activity. Huggins and Edwards (2011) claim that it is practical in second/foreign language learning since it is paramount in assisting and developing reading comprehension. Yu (2004) affirms that scaffolding is not a permanent duty because it is temporarily provided and gradually removed as the learner becomes more competent and independent.

As Archer (2008) indicates, scaffolding for reading comprehension can be divided into three phases; the before-reading phase where pronunciation and meaning are taught, background knowledge is activated, and text is previewed. In the during-reading phase, reading practice occurs, questions are asked, and strategies for passage reading are applied. Finally, in the after-reading phase, students should be engaged in discussion, and explicit instruction on comprehension skills and vocabulary practice should be provided.

Principally, this study implemented two strategies: scaffolding mediated using visualizing, and scaffolding using graphic organizers. As for the first, Herrel and Jordan (2004, as cited in Lestari & Misdi, 2016) claim that "visual scaffolding is a strategy for teaching English that uses drawings, photographs, and other visuals to help students to better understand the language" (p. 133). This claim correlates with the conception of mental imagery, which in turn is a strategy that relies on forming mental images while reading (Schirmer & McGough,

2005). The strategy can be used before, while, and after reading as it is useful in improving reading comprehension with EFL/ESL learners (Erfani et al., 2011; Ghazanfari, 2011). Visualizing text is a crucial skill for students because if they can get the picture, they often have the concept. When students do not get those pictures in their heads, the teacher may need to think aloud and talk to them through the ideas in the text, explaining the pictures that come to mind.

In the second place, graphic organizers are "visual representations of information from a text that depict the relationships between concepts, the text structure, and key concepts of the text" (Miranda, 2013, p. 100). They provide both a way to recognize text structures and set them up. Learners will better understand information if relationships among the text are shown visually. They might be useful to support students in predicting, organizing their ideas and information, recalling information, expanding their knowledge, comparing their background knowledge to information provided in the learning material, and better understanding their reading texts (Echeverri & McNulty, 2010). There are several graphic organizers, for example, hierarchical, conceptual, sequential, evaluative, relational, and cyclical (Gil-García & Villegas, 2003). Additionally, graphic organizers can be utilized in any reading stage, namely, before, during, and after reading.

Methodology

This study is framed as educational action research in which the teacher should be a problem-solving agent in society. Ferrance (2000) states that action research "helps to confer relevance and validity to a disciplined study" (p. 13), being a chance to look at one's teaching in a structured manner. It also combines features of quantitative and qualitative approaches, making it a mixed method because it involves quantifying data and begins with conscious observation of the researcher's reality, following a descriptive and interpretive analysis (Mackey & Gass, 2005). Particularly, this research followed the principles of a quasi-experimental design with no control group, which means that experimental units are not assigned at random. Therefore, there are no group comparisons; instead, there are intervention activities for all the participants.

Participants

The eighth grade has 31 students, 19 of them are females and 12 are males; their age ranges from 12 to 18. They belong to low-income families and have experienced phenomena like displacement (five of them), extreme poverty, family dysfunctionality, and forced emigration. Eight are Venezuelan-born students with cultural uprooting problems; others come from rural areas. Their English language proficiency was not officially measured, but

it is limited to almost A1 level descriptors even though they should be at A2.2 according to Colombian English language education guidelines.

Instruments

***Pretest*:** It was a multiple-choice reading diagnostic test that contained 21 reading different level comprehension questions with options from A to D. Questions were randomly disposed and divided into three short texts (*My Name is John, All About Space, and Football*). Questions were written to establish any progress in the reading comprehension skills and levels.

***Posttest*:** It assessed participants' skill development at the end of the intervention. The pretest and the posttest had the same content and number of questions; both had the same three short-text structures; however, the questions differed in form and wording. To guarantee the reliability and validity of these instruments in measuring changes, texts were extracted from certified sources belonging to an A1 English language proficiency level.

***Rubric*:** Each rubric consisted of four criteria related to the design and sequencing of visualization work (mental imagery) and graphic organizers respectively. These criteria also included descriptors for a three-level reading comprehension scale: literal, inferential, and evaluative. Rubrics had four levels of assessment (from advanced to below basic) and a numerical indicator from 4 to 1, being four the highest level and one the lowest level.

***Journal*:** It was a retelling of what the teacher/researcher observed, did, or experienced. It was a valuable tool because, in addition to its perspective and scope, it assisted in keeping detailed documentation of the research process; it helped track the development of the research understanding and provided a context for reflecting on emerging situations. Observations were therefore kept in this journal.

Procedure

***Exploration*:** This action research started with the reflection on several issues and problems that affected the teaching and learning situation of the teacher/researcher, mainly using observation. Reading was selected as the research topic and a specific course of action was devised, the idea of measuring reading comprehension through a test became more evident.

***Planning*:** This phase was divided as follows:

- **Stage I**. Identifying area of focus (exploration), reviewing related literature, developing research questions and objectives, and preparing paperwork for the action research. Based on the conditions surrounding the context, research questions and objectives were written.

- **Stage II**. Strategy design and preparation of instruments for data collection. Collecting initial diagnostic data from the pretest. Creation of lesson plans, reading comprehension tests, and rubrics.
- **Stage III**. Implementation of intervention and data collection with a journal and rubrics; data collection from posttest as specified in the timeline.
- **Stage IV**. Comparing and evaluating all data collected. Preparing a report of the study.

Pedagogical Intervention Using Scaffolding Strategies in Class Activities

The intervention implemented instructional reading activities that were intended to help students improve reading comprehension using visualization and graphic organizers. It trained participants to be able to: (a) apply visualizing scaffolding strategies through reading activities for reading comprehension, (b) analyze information by using graphic organizers for written material understanding, and (c) develop strength and weakness awareness when self-assessing reading performance with the rubrics.

The intervention design had ten different task-like activities in a sequence; these activities involved other language skills, for example, speaking (discussion) and writing. The activities focused on specific visualizing charts and graphic organizers. They also had a similar structure, an introductory part of instructions, a scaffolding activity, a reading passage, comprehension questions, a discussion/sharing section, and the application of the rubric.

The introductory part consisted of the name and the type of activity, the necessary resources, and the allotted time for each activity. It also contained a short description of the reading task and the language focus dealing with grammar. The scaffolding activity was specially planned to work as a support for reading comprehension. Table 1 summarizes the names of the reading passages and the types of scaffolding activities.

Table 1. *Summary of Activities*

Activity	Name	Type
Activity 1	Five Collie Puppies for Sale	Visualizing frame
Activity 2	Feeding our Pets	Graphic Organizer – Venn Diagram
Activity 3	My Neighbor's Dog is Purple	Visualizing chart
Activity 4	Spider Webs	Graphic Organizer – KWL
Activity 5	My Wonderful Family	Visualizing three-column chart
Activity 6	Stonehenge	Graphic Organizer – Mind map

Activity	Name	Type
Activity 7	Incredible but True	Visualizing with a two-column chart
Activity 8	Preparing Food	Graphic Organizer –Steps in a process diagram
Activity 9	Golden Homework Tips	Visualizing the "movie in my mind" chart
Activity 10	A Family Holiday	Graphic Organizer – Story elements

Note: Data collected by the author.

The reading passage was also a delicate issue since all the readings had to be for the A1 English language proficiency level or adapted to comply with language requirements; for instance, vocabulary or grammatical tenses. Most readings were of about 150-170 words with common topics like family, pets, and daily activities. As for the comprehension questions, they were written to, first, collect the new information obtained with the support of the scaffold and, secondly, to train learners to answer questions of different levels (literal, inferential, and evaluative). The questions referred to the reading passages and enhanced reading comprehension subsequently.

The last step was the application of the rubric that guaranteed a free self-assessment process. Once students got used to the rubrics, they could objectively assign points depending on their achieved level of comprehension and the general work overview. Each activity was organized in a lesson plan with common steps for reading comprehension. Steps comprised a section for pre-reading, during-reading, and after-reading. Besides, there were two final sections for discussion-socialization and assessment.

Pre-reading had distinct goals to pave the way for students to engage with the activity and the reading passage topic. The teacher/researcher requested students to preview the text using questions, revise unknown vocabulary, introduce pronunciation of difficult words, activate simple background knowledge, relate some reading aspects to students' lives, and explain the corresponding scaffolding activity. Students paid attention to instructions, solved questions regarding the text, and took notes.

During the reading, the teacher/researcher guided students in reading the passage asking questions to check their understanding. The teacher/researcher made students generate questions on the content and stimulated personal and silent reading. Students were also encouraged to take notes to develop the corresponding scaffolding strategy, either with the visualization or graphic organizers. Once the information was reorganized, the chart or the drawing was completed; the teacher/researcher checked students' work without any intervention or correction.

The after-reading comprised tasks like completing the graphic organizers or the visualization charts. Afterward, the teacher/researcher engaged students in a short presentation and discussion on the material and the product obtained from the task. Comprehension questions and answers were explained and discussed.

Data Analysis

Implementing scaffolding activities to enhance reading comprehension in the classroom was applied over seven weeks. Pretest and posttest generated a large amount of quantitative data while the teacher/researcher's observation of students' reactions towards activities, their participation, interaction, motivation, and reading comprehension development produced a similar quantity of qualitative information.

This step required a sensible and systematic analysis process by using descriptive statistics to measure the results of the tests, tabulated in a Microsoft Excel file. Firstly, a four-column table contained the participants' names, the number of correct literal questions, inferential questions, and evaluative questions (out of seven questions). These data were organized to calculate the arithmetic mean of information corresponding to the pretest and posttest, which went before and after the implementation of the strategies respectively.

A second kind of chart resulted from the percentage analysis of valid answers. These two pie charts showed the general results of both pretest and posttest and the three categories in different colors with their specific percentage. A third chart was necessary since data from both tests had to be represented and compared in a bar chart to measure the effectiveness of the reading comprehension process and the differences among arithmetic means. Therefore, a general table was created to organize information about each student; it contained ten columns representing each activity. Then, a new auxiliary table was created for the graphic organizer activities to combine them and get the arithmetic means from each. Bar charts were designed to represent this information and make comparisons.

Data from the rubrics were deeply studied to expose how students assessed themselves, which activities were best valued; visualizing or graphic organizers, and know the arithmetic mean of the ten activities. Data from journal entries were also vital to understanding students' dynamics while doing activities in the classroom, determining how successful an activity or a course of actions was, getting impressions given by certain participants, and noticing recurring patterns or significant events pertinent to discern students' cognitive demands and motivational levels.

Results

The following are the results obtained in order of analysis: pretest, posttest, rubrics, and journal. As shown in Figure 1, all the levels have at least one correct answer out of a

maximum of seven. The maximum number of correct literal questions (light blue) was six, the inferential questions (light gold) were seven, and the evaluative questions (dark blue) were five.

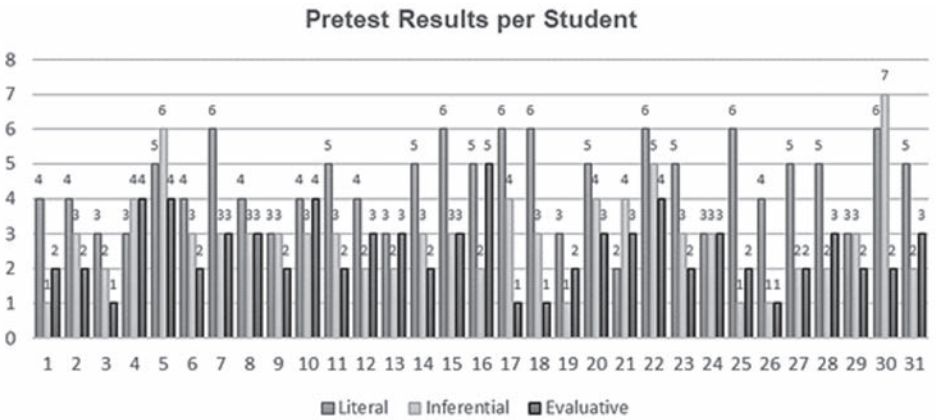

Figure 1. *Pretest Results per Student*

This initial analysis only considered the number of right questions by each category without assigning any special quantitative or qualitative value to items. This means that talking about the arithmetic mean, 4,59 literal questions as well as 2,94 inferential questions, and 2,55 evaluative questions out of seven were correctly answered. For the pretest mean ($\bar{X}$) or average score, the teacher/researcher applied the following statistical formula $\bar{X} = \sum x/n$. Its symbols stand for: ($\bar{X}$) the mean or average, ($\sum$) the sum that follows (x) individual scores, and (n) the number of test-takers. This formula shows the average of a sum of numbers reflecting the central tendency of the position of the numbers. Then:

Literal questions	Inferential questions	Evaluative questions
Mean = $\bar{X} = \sum x/n$	Mean = $\bar{X} = \sum x/n$	Mean = $\bar{X} = \sum x/n$
$\bar{X} = 1380/31$	$\bar{X} = 910/31$	$\bar{X} = 790/31$
$\bar{X} =$ **44.52**	$\bar{X} =$ **29.35**	$\bar{X} =$ **25.48**

The mean ($\bar{X}$) indicates that test-takers in the literal question category had an average score of 44.52, for inferential questions a score of 29.35, and for evaluative questions a score of 25.48. These results mean that the group only got a mean of 99.35 points out of 210 possible (47.3% accuracy). The standard deviation was chosen as a measurement because it compared each data point to the mean of all data points, it displayed whether the data points

are nearby or whether they are spread out. Thus, the analysis of the standard deviations, concerning the mean ($\bar{X}$), in all categories, showed that individual scores were determining factors to categorize the group of questions as heterogeneous. For instance, the standard deviation for literal questions was 11.55 away from its mean (44.52), for inferential questions was 13.39 away from its mean (29.35), and finally, for evaluative questions was 9.73 away from its mean (25.48). Figure 2 is due to those students who scored quite high and students who scored quite low in comparison to the distance (X- $\bar{X}$) between individual scores (X) and the mean ($\bar{X}$).

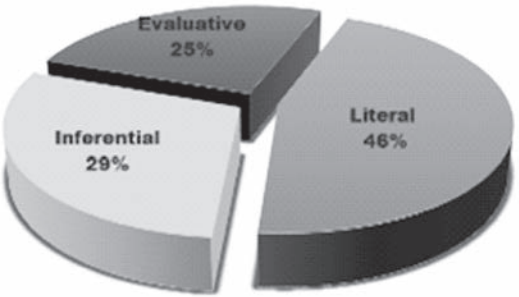

Figure 2. *Pretest Accuracy Results*

The pie chart in Figure 2 shows the level of accuracy in the pretest general results and the levels of accuracy per category in the pretest. This means that only 46% of the literal questions, 29% of the inferential questions, and 25% of the evaluative questions were correctly answered.

Regarding the posttest, all the levels had at least one correct answer out of seven right answers per category. The maximum number of good literal questions was seven, the inferential questions were five, and the evaluative questions were six. Figure 3 depicts this information in light blue for literal, light gold for inferential, and dark blue for evaluative.

The mean ($\bar{X}$) indicates that test-takers in the literal question category had an average score of 51.29, for inferential questions a score of 25.16, and for evaluative questions, a score of 27.74. These results show that the group only got a mean of 104.19 points out of 210 points possible (49.6% accuracy). The analysis of the standard deviations (that describe how dispersed a set of data is) concerning the mean ($\bar{X}$) in all categories showed that individual scores witness a degree of heterogeneity in the group of questions. The following is a summary of the processed data showing the standard deviations for the three categories of questions:

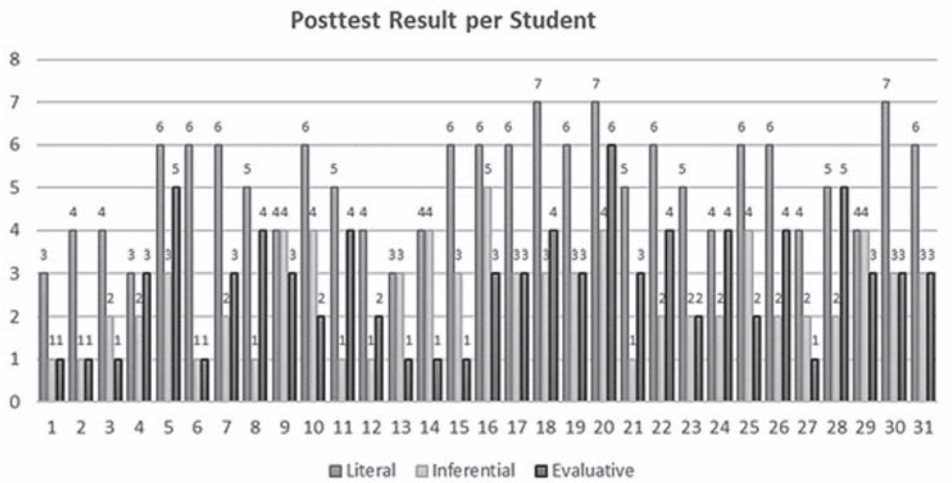

Figure 3. *Posttest Results per Student*

Literal questions	Inferential questions	Evaluative questions
s = √∑ (x- $\bar{X}$) /n-1	s = √∑ (x- $\bar{X}$) /n-1	s = √∑ (x- $\bar{X}$) /n-1
s = 4348,39/31-1	*s = 3974,19*/31-1	*s = 5741,94*/31-1
s = √139,27	*s* = √127,20	*s* = √184,22
s = 11,80	s = 11,28	s = 13,57

Figure 4 shows the level of accuracy in posttest general results, which means that 50% of the literal questions, 24% of the inferential questions, and 26% of the evaluative questions were correctly answered.

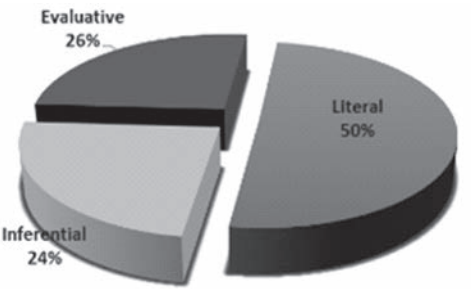

Figure 4. *Posttest Accuracy Results*

A comparative analysis of the results from the pretest and the posttest revealed a slight growth in the average score or mean of the posttest in certain areas but a non-trivial deterioration of other general aspects, in other words, numbers indicate a better performance which might have changed the original educational situation, but not completely. Table 2 below shows each test's average score (mean) and the accuracy percentage.

Table 2. *Average Score Comparison*

Average Score		
Test	**Total Mean**	**% Accuracy**
Pretest	99.35/210	47.3
Posttest	104.19/210	49.6
Difference	4.84	2.3

Note: Data provided by author.

For the categories (literal, inferential, and evaluative levels), both tests were statistically similar with small differences. Figure 5 compares the pretest and posttest concerning those categories and the number of correct answers. The analysis showed that the arithmetic mean for literal and evaluative questions increased; however, the inferential questions mean decreased.

As for the standard deviations, the literal questions in the pretest were closer (s = 11,55) to the mean than in the posttest (s = 11,80). This result means that the group was slightly less dispersed in the first test in this category. Inferential questions were more attached to the mean in the posttest (s = 11,28) than in the pretest (s = 13,39). For evaluative questions, the pretest (s = 9,73) showed better uniformity than the posttest (s = 13,57).

The previous comparison may not be uncomfortable if references are obtained in the pretest and posttest. However, it may be remarkable when considering that the closer the standard deviation is to 0 the better for homogeneity. Observing the smallest amount (s = 9,73) obtained during both tests, it might be inferred that the group where tests were taken was unstable in answering questionnaires like a test and responding to activities. Besides, the group may have been unstable in their language knowledge and their performance level.

The rubrics created to assess to what extent students developed a consciousness of evaluation also deserved another revising perspective since they could indicate activities students considered easier or more difficult to do, students' level of commitment, or even the level of acceptance of either a visualizing activity or a graphic organizer-based activity.

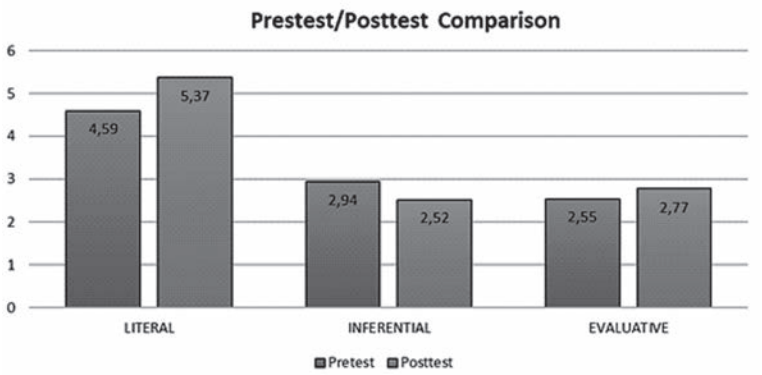

Figure 5. *Pretest and Posttest Category Comparison*

Results were paradoxical because it was found that an important percentage of activities were never done or submitted to be analyzed. Results also showed that visualizing activities were better valued (10,4 points) than graphic organizer-based activities (9,6 points). Finally, students who did activities and scored them responsibly tended to get some improvement.

So far, results from the pretest indicated that all the participants answered all-level questions but did better in literal questions. Results also showed the presence of a high standard deviation index; posttest results showed improvement in some categories of questions but also a decrease in inferential questions which ended up negatively affecting its general numerical results; standard deviation looked better, closer to the mean but still too high to demonstrate homogeneity.

Discussion and Conclusions

Results are important because they help understand the nature of the context and strategy implementation. Thus, based on the data analysis, the researcher can state that participants improved slightly their reading skills by implementing scaffolding activities. Nonetheless, results also revealed that only two levels of comprehension displayed positive progress while the other seemed to weaken. In general terms, the results are consistent with theory and other similar research. For instance, Lestari and Misdi (2016) indicated a difference in students' learning before and after visual scaffolding was applied in their context. A similar phenomenon happened to Abdul-Majeed and Muhammad (2015); they sustained that scaffolding is a process that supports and improves students' performance, before, during, and after reading. This way, graphic organizers, pictures, and charts can all serve as scaffolding tools.

Statistics showed that the scaffolding strategy that may best develop eighth graders' reading skills was visualizing because students demonstrated a preference for the graphic organizer-based activities, probably, due to the lower level of cognitive demand exhibited when students were asked to make drawings by using clue words or expressions from the texts, instead of arranging information in charts or diagrams. Visualizing did not demand strenuous tasks except those that used words or descriptions of mental images.

According to Lestari and Misdi (2016), visual scaffolding may be presented in various ways while teaching reading, but its achievement heavily depends on how it is applied. For the context in question, drawings represented more simplicity and less use of written language. It can be asserted that both types of strategies (visualizing and graphic organizers) are advisable; nevertheless, visualizing is more recommendable for less experienced language learners although graphic organizers might be a source of motivation, fun, and utility while remembering specificities and understanding what is being read (Echeverri & McNulty, 2010).

On the other hand, one factor that could contribute to obtaining the factual outcome was the dissimilarity in the participants' English language proficiency levels. Following it, vocabulary represented a big challenge that participants had not faced before, thus, working on previous knowledge of the topic and using scaffolding activities denoted an absolute progress during the application. In this respect, Brigham et al. (2007) assure that reading comprehension relates to understanding the lexicon and previous information about the text topics.

Consequently, based on the two tests' results, participants required more training with inferential and evaluative reading levels since reading is not only interpreting written messages literally, but getting concealed details, author's purpose, and more. That is how, in many cases, it was observed that activities reached their goals and made students study the text thoroughly; however, a good percentage of students did not respond accordingly to the activities, and thus, they did not get enough practice. This is why, commitment to do activities and following instructions in participants were highly advisable.

As it can be noticed, implementing a reading comprehension strategy can lead the researcher to meet unexpected experiences and results. For example, the research plan was intended to enhance the reading skill, but the significant dispersion of the standard deviation allowed saying that the level of development of this reception skill was not the same for each participant. Conversely, these results differ in some respects from a study by Sukyadi and Hasanah (2010), they concluded that the improvement of experimental groups in reading comprehension was on both types of questions, literal and inferential, other studies, like those conducted by Al Aila (2015) and Al Eissa and Al-Bargi (2017), proved a rise in

motivation. In contrast, the current study did not reach that improvement at the inferential level but at the evaluative level with a stable motivation.

Finally, the study results implicate a series of pedagogical recommendations and associations as follows: It is suggested that teachers use visualizing and graphic organizers and other scaffolding strategies such as tables, graphs, and visuals, as well as cooperative learning and hands-on activities (Bradley & Bradley, 2004) regularly to improve reading skills. Scaffolding activities are not an end in themselves, they are the gap between the student's comprehension and the text; in this perspective, it is much better to teach students some reading strategies than reading skills in isolation.

To sum up, the results possibly appear insignificant; however, they help affirm that the reading comprehension process may be difficult; scaffolding can help make this experience enriching. To do so, knowing the context, the population, and the language proficiency level of language in a detailed way will benefit the selection of suitable strategies and maintain motivation. Furthermore, unforeseen circumstances may completely alter outcomes, so making sound generalizations about the scaffolding effects can empower students.

The study encountered some limitations and weaknesses. The first one has to do with the sample size, a smaller sample chosen at random would have been more comfortable for strategies to be applied and analyzed. Although the literature review was extensive, no prior research studies on visualizing and graphic organizer-based activities combined were found. Additionally, the participants' English fluency level embodied vast barriers mainly when they wanted to know what the text conveyed and asked for, or while sharing information. This demanded a lot of active work for the teacher/researcher who always tried to compensate for deficiencies by being a mediator between participants and the language needed. A noticeable weakness was the lack of some critical data from part of the self-assessment rubrics that were never provided by students and could have changed the aftermath in deciding the most valued strategy. This fact was compensated with the observations of the teacher/researcher since we noted that activities with visualizing tasks were more enjoyable, interesting, and less demanding.

Finally, similar research should continue in reading with an exclusive type of text, e.g., narratives with one or two categories of questions. The study should also take a long-term period using only one strategy of preference or be extrapolated to the writing production. Suggestions for further research must also include a more extended action plan that envisions more time to apply the strategies, varied activities, peer support, and proficiency tests.

References

Abdul-Majeed, M. R., & Muhammad, N. M. (2015). The effect of using scaffolding strategies on EFL students' reading comprehension achievement. *Al-Adab Journal, 111*, 91–118. https://doi.org/10.31973/aj.v0i111.1538

Al Aila, M. Z. (2015). *Effectiveness of using scaffolding strategy on developing seventh graders' reading comprehension skills*. [Master Thesis. The Islamic University, Gaza]. http://hdl.handle.net/20.500.12358/18549

Al Eissa, A. A. A., & Al-Bargi, A. (2017). The impact of scaffolding strategies in enhancing reading comprehension skills of university students in a Saudi context. *International Journal of Linguistics*, *9*(5), 1-22, https://doi.org/10.5296/ijl.v9i5.11798

Archer, A. (2008). *Scaffolding comprehension of informational text*. Sonoma County Office of Education website: https://www.scoe.org/files/informational-text.pdf

Bradley, K., & Bradley, J. (2004). Scaffolding academic learning for second language learners. *The Internet TESL Journal*, Vol. X, No. 5. http://iteslj.org/Articles/Bradley-Scaffolding/

Brigham, R., Berkley, S., Simpkins, P., & Brigham, M., (2007). *Comprehension strategy instruction*. Division for Learning Disabilities and the Division for Research.

Centre for Canadian Language Benchmarks. (2015). *Handout 6.2: Levels of Comprehension and Question Types*. Realize Forum website: https://realizeforum.ca/wp-content/uploads/2017/04/Handout-6.2-Levels-ofComprehension-and-Question-types_2015.pd_.pdf

Clark, K. F., & Graves, M. F. (2005). Scaffolding students' comprehension of text. *The Reading Teacher*, *58*(6), 570–580. https://doi.org/10.1598/RT.58.6.6

Echeverri, L., & McNulty, M. (2010). Reading strategies to develop higher thinking skills for reading comprehension. *Profile, Issues in Teachers` Professional Development, 12,* 107-123.

Erfani, S. M., Iranmehr, A., & Davari, H. (2011). Deepening ESP reading comprehension through visualization. *Journal of Language Teaching and Research, 2*(1), 270-273. https://doi.org/10.4304/jltr.2.1.270-273

Ferrance, E. (2000). *Action Research*. Brown University.

Ghazanfari, M. (2011). The role of visualization in EFL learners' reading comprehension and recall of short stories. *Iranian Journal of Applied Language Studies, 1*(1), 1-23. https://doi.org/10.22111/ijals.2011.43

Gil-García, A., & Villegas, J. (2003). *Engaging minds, enhancing comprehension and constructing knowledge through visual representations*. https://files.eric.ed.gov/fulltext/ED480131.pdf

Grabe, W., & Stoller, F. (2013). *Teaching and researching reading* (2nd ed.). Routledge.

Graves, M. F., & Fitzgerald, J. (2004). *Scaffolding reading experiences for English language learners*. Christopher Gordon.

Huggins, E., & Edwards, R. (2011*).* Scaffolding to improve reading comprehension and to write a scholarly research paper. *International Journal of Humanities and Social Science, 1*(16), 30-36.

Lestari, N. F., & Misdi, M. (2016). Using visual scaffolding strategy for teaching reading in junior high school. *Academic Journal Perspective: Education, Language, and Literature, 4(2),* 131, https://doi.org/10.33603/perspective.v4i2.1538

Mackey, A., & Gass, S. (2005). *Second language research: Methodology and design*. Lawrence Erlbaum Associates, Inc.

McNamara, D. S. (2007). *Reading comprehension strategies: Theories, inventions, and technologies*. Lawrence Erlbaum Associates, Inc.

Miranda, J. L. (2013). Effect of graphic organizers on the reading comprehension of an English language learner with a learning disability. *Second Language Studies, 30*(1), 95-183, http://hdl.handle.net/10125/40715

Nunan, D. (1999). *Second language teaching and learning*. Heinle CENGAGE Learning.

Salem, A. (2017). Scaffolding reading comprehension skills. *English Language Teaching, 10*(1), 97-111, http://dx.doi.org/10.5539/elt.v10n1p97

Schirmer, B. R., & McGough, S. M. (2005). Teaching reading to children who are deaf: Do the conclusions of the national reading panel apply? *Review of Educational Research*, *75*(1), 83–117. https://doi.org/10.3102/00346543075001083

Snow, C. (2002). *Reading for understanding: Toward an R&D program in reading comprehension*. RAND Corporation.

Sukyadi, D., & Hasanah, E. U. (2010). Scaffolding students' reading comprehension with think-aloud strategy. *The Language Center, Indonesia University of Education 2*(4), 1-19.

Victoria State Government. (2018). *Comprehension*. https://www.education.vic.gov.au/school/teachers/teachingresources/discipline/english/literacy/readingviewing/Pages/litfocuscomprehension.aspx

Walqui, A. (2006). Scaffolding instruction for English language learners: A conceptual framework. *The International Journal of Bilingual Education and Bilingualism, 9*(2), 159-180. https://doi.org/10.1080/13670050608668639

Whitten, M. (2004). *Collage Reading &Study Skills*. Longman.

Yu, G. (2004). Perception, practice, and progress: Significance of scaffolding and zone of proximal development for second or foreign language teachers. *Asian EFL Journal, 6*(4), 1-24.