

## Jordanian EFL Female Ninth-Grade Students' Reading Engagement and their Attitudes toward Visual Thinking Strategy

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### Abstract

The aim of this study was to determine the Jordanian EFL female ninth-grade students' engagement in the reading skill and their attitude toward visual thinking strategy. In this study, the descriptive research methodology was applied. The researcher used an observation rubric to measure the experimental students' engagement in reading classes and a questionnaire to investigate the students' attitudes toward the visual thinking strategy (VTS). As measured by an observation rubric, the experimental groups' members appeared to be moderately interested in their reading assignments. Students' attitudes toward the investigated VTS modality were generally positive, with mean agreement scores in the 3.2–3.22 range. The domain "Attitudes toward using the Visual Thinking Strategy in reading classes" received the highest level of agreement from students, followed by "Attitudes toward the teacher's role and her classroom management during VTS instruction" and "Attitudes toward reading sub-skills through the VTS."

**Keywords:** Attitudes, reading comprehension, Visual Thinking Strategy (VTS), engagement.

## مدى انخراط طالبات الصف التاسع الأردني في مهارات القراءة وموقفهن من استراتيجية التفكير البصري.

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### المخلص

الهدف من هذه الدراسة هو تحديد مدى انخراط طالبات الصف التاسع الأردني في مهارات القراءة وموقفهن من استراتيجية التفكير البصري. في هذا البحث التصميم الوصفي تم تطبيقه. استخدمت الباحثة نموذج تقييم لقياس مشاركة طلاب التجربة في فصول القراءة، واستبانة لاستقصاء اتجاهات الطلاب نحو استراتيجية التفكير البصري كما تم قياسه من خلال نموذج تقييم الملاحظة، بدأ أن أعضاء المجموعات التجريبية مهتمون بشكل معتدل بمهام القراءة الخاصة بهم. كانت مواقف الطلاب تجاه استراتيجية التفكير البصري. التي تم التحقيق فيها إيجابية بشكل عام، مع متوسط درجات توافق في النطاق 3.2-3.22. تلقى مجال "المواقف تجاه استخدام استراتيجية التفكير المرئي في فصول القراءة" أعلى مستوى من الاتفاق من الطلاب، يليه "المواقف تجاه دور المعلم وإدارة الفصل الدراسي أثناء تعليم التفكير البصري." و "المواقف تجاه مهارات القراءة من خلال استراتيجية التفكير البصري."

**كلمات مفتاحية:** اتجاهات، فهم القراءة، استراتيجية التفكير البصري، المشاركة.

## Introduction

It is the attitude of the student that plays the most important role in determining the outcome of any endeavor (Durak & Saritepeci, 2017). Therefore, it is essential to take into account the factors that affect students' motivation to learn. According to Zhao (2015), a number of factors—including input, presentation, resources, the classroom setting, students, and teachers—contribute to the way in which students approach learning. Further, Wilinkiewicz-Górniak (2019) states that when using VTS, English language instructors can make use of any resources that feature visuals, such as textbooks or worksheets. Images, maps, graphs, posters, cartoons, and other works of art are some examples. This can be done, for instance, with the help of a movie poster that features numerous questions and difficult tasks.

It was discovered that there is a strong relationship between reading attitude and comprehension skills in an EFL context (Al-Madany, 2010). "Engaged reading" refers to reading that is planned, intellectual, self-driven, and purposeful (Guthrie & Wigfield, 2000: 404). Research suggests that students with a positive reading attitude are more likely to engage in purposeful reading and will therefore be more successful in their comprehension of English as a Foreign Language (EFL).

According to Dennis (2008), there are several variables that can affect reading comprehension skills, such as the complexity of the reading text, environmental influences, anxiety during comprehension, interest and motivation, decoding or word recognition speed, and medical issues. In this study, "attitudes toward VTS" refers to ninth-grade students' behavior or personality traits associated with using the visual thinking strategy on reading skills that grow from students' direct or indirect experiences with this strategy. Attitudes typically fall somewhere on a spectrum ranging from completely favorable on one end to completely unfavorable on the other.

To ensure that readers have positive attitudes, there must be a substantial vocabulary and underlying knowledge base available (Al-Akloby, 2001). Students should use their familiarity with reading English as well as purposeful and conscious reading strategies to comprehend what they are reading (Sheorey & Mokhtari, 2001: p. 433). This is a reference to the lack of knowledge among reading instructors and students regarding appropriate reading practices to use. In other words, both the teacher and the student should be aware of the when, what, why, and how of this reading method. The reading strategy is defined by Carrell, Gajdusek, and Wise (1998) as "activities that readers select and control to attain desired goals or objectives" (p. 97). Young and Oxford (1997) divided the reading strategies into three groups: planning strategies, attention strategies, and evaluation strategies. The focus is on the student's attitudes right now since they have an impact on how motivated they are to learn a language; in other words, they provide the foundation for motivation (Masgoret et al., 2001). Negative attitudes and moods can cause delays for even the most eminent pupil who fully comprehends all the technical aspects of how to learn a new language. On the other hand, being in good health and having a positive outlook can significantly increase the success and enjoyment of learning a language (Merisuo-Storm, 2007; Oxford, 1990). Therefore, it is possible to achieve "the most far-reaching implications" by building positive language-related values and attitudes" (Dörnyei, 2001, p. 51) in order to encourage L2 learners.

Burger and Winner (2000) hypothesized that a motivating mechanism may entail employing the arts as a gateway to reading, so giving engaging possibilities would encourage less motivated kids to desire to read. Raiyn (2016) suggests an innovative idea to enhance

students' critical thinking skills through a visual learning technique. These three elements are the teacher, the student, and the learning process; which make up the main components of this method. The role of the teacher involves observing the learning process and figuring out the best ways to encourage higher-order thinking (HOT) skills. In the classroom, the researcher presents a useful teaching method that encourages the presentation of information through visual tools like pictures, diagrams, flowcharts, and interactive simulations. Additionally, he contrasted traditional and visual learners based on their SWOT-evaluated HOT skills. Performance analysis reveals that the students' HOT abilities improved because of visual learning methods.

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Performance analysis reveals that the students' HOT abilities improved because of visual learning methods.

Zelvis (2008) investigated how students' reading competency was affected by the VTS across a range of motivation levels. 104 fourth graders from upper-middle-class homes in a Connecticut school system made up the sample population. Each student filled out a "Motivation to Read Profile" to evaluate their reading drive. The findings show that students who were taught using VTS performed no better than those who were not. However, there was a substantial main effect of motivation for highly motivated students on the comprehension subtest, even if the use of VTS as the teaching strategy did not significantly increase performance for students with low motivation.

Ghazanfari (2009) examined how visualization affected EFL students' understanding and remembering of short stories. A short-story course was assigned to two groups of EFL undergraduates ( $N = 50$ ), one of which served as the experimental group and the other as the control group. The identical short stories were studied by both groups, and the researcher provided guidance. Before, during, and after reading a short novel, the experimental group was instructed to envision by drawing sketches of the people, scenarios, or locations as they appeared. While the experimental group was instructed in image production and given visualization exercises to complete before, during, and after reading the same texts, the control group received neither. The "visualizers," as opposed to the "non-visualizers" (the control group), outperformed the others on both exams.

Echeverri Acosta and McNulty Ferri, (2010) examined Spanish eighth graders who participated in thinking through reading using comprehension techniques. Thirty students participated in the study. Most of them answered the knowledge, comprehension, and application questions in English. Even though they answered the application questions in Spanish, the less competent students' responses lacked clarity.

Rader (2010) decided to design a trial program to see if students' reading knowledge might be improved by using visualization and oral language abilities with a particular collection of nine questions. The pilot program was a two-year experiment that used first-grade students to retell a narrative at an urban elementary school. There were 69 students in the pilot program. Thirty-three of the 69 pupils would receive the intervention, while the remaining 36 would not. Rader (2010) devised a pretest and posttest consisting of a paragraph read aloud to the students. Students were instructed to read the paragraph aloud. Students were requested by their teacher to imagine visuals of the story while listening to the paragraph. They were supposed to retell the story after it was finished. Rader (2010) checked the retelling by counting the number of preselected concepts from the paragraph and the number of words in their retelling. The pupils were instructed to summarize the plot of the story. Rader (2010) also created a scoring rubric for this assessment. According to the findings, students who employed visualization tools improved their reading comprehension on the DRA Benchmark scores of the school's state exam results.

Lhadon (2019) studied the effect of the visual imaginary strategy on students' learning achievement and satisfaction with English reading comprehension skills in 25 Bhutanese students in Grade. A multi-method approach was used. The cluster random sampling technique was used to choose the sample group. The paired sample t-test was used to assess the quantitative data collected from the achievement tests. The learning accomplishment test score analysis revealed that the mean of the posttest scores ( $x = 19.26$ ) was greater than that of the

pretest ( $x = 11.30$ ), with a mean difference of 7.96. The sample group's significance level was 0.01. Similarly, descriptive statistical analysis was used to assess the replies to the satisfaction survey questionnaire. According to the qualitative data acquired from learning behavior observations, the students enthusiastically participated in the activities with confidence and excellent effort.

### **Statement of the Problem**

#### **Purpose of the study**

This study examines ninth-grade Jordanian EFL female students' reading engagement and attitudes toward visual thinking strategy.

#### **Questions of the study**

To tackle these issues, this study answered the following questions:

1. To what extent were students engaged in reading classes?
2. What are the experimental group students' attitudes toward using VTS?

#### **Significance of the Study**

Teaching children to read fluently is a major focus of elementary school curricula in Jordan and elsewhere (Al-Damiree & Bataineh, 2016). According to Mikulecky and Jeffries, "the reasons for the importance of reading are that by reading, the students can increase their acquisition of the target language; by reading, they can also become more at ease with written English; and by reading, they can also gain new vocabulary, knowledge, ideas, and information from the text" (1986, p.1). All of these skills are essential for success in academics, communication, and life.

From the researcher's teaching and supervision experience, it has been noticed that students' engagement and attitude play a significant role in student reading performance. Therefore, new teaching strategies such as VTS might attract the attention of the students and improve their reading performance.

#### **Limitations of the Study**

The conclusions of this study can be applied to populations that resemble the sample, but they cannot be applied to all grade levels. Hence, a random sample is useless. Also, this study will endure for 8 weeks in a public school; it's likely that the results would change if the study went on longer. Teaching VTS is additional.

#### **Operational Definition of Terms**

The present study considers **reading** as a mental process where ninth-grade students interact with *Action Pack 9* reading texts by drawing mental images, using their previous knowledge, acquiring new vocabulary items, asking questions, inferring information, identifying main ideas and details, and communicating orally.

**Reading comprehension** is a complex combination of automatic and deliberate cognitive processes that enables the reader to create a mental image of the text (van den Broek & Espin, 2012). Similar to this study, reading comprehension involves ninth-grade students creating images, perceptions, and emotions utilizing VTS. Comprehension is measured by a test prepared by the researcher.

Visual Thinking Strategies (VTS) are described by Housen (1983) as a sequential curriculum that includes teacher-led discussions about art in the classroom, annual travels to art museums, teacher development, examining, and debating artistic pieces using a debate facilitator.



In this study, "attitudes toward VTS" refers to ninth-grade students' behavior or personality traits associated with the using visual thinking strategy on reading skills that grow from students' direct or indirect experiences with this strategy. Attitudes typically fall somewhere on a spectrum ranging from completely favorable on one end to completely unfavorable on the other. Before developing the instructional program, the reading skills aligned with VTS along with their reading objectives were first identified. These skills are based on the reading activities in the *Action Pack 9* textbook.

## **Methodology**

### **Sample and Data Collection**

The researcher precisely chose the 33 female EFL ninth-graders who participated in the current study. They went to the government-run Al-Rubia Primary School for Girls in Jordan's Mafrq Directorate of Education. The current study was conducted in the first semester of the academic year 2022-2023. This school has three female grade nine sections. Two of the three parts were picked at random.

The researcher carefully considered her options before deciding on Al-Rubia Primary School for Girls for three reasons. First, the school has three sections with a sizable number of ninth-graders, therefore the researcher can randomly choose any one of them. Second, the instructor voluntarily consented to carry out the lesson plan. Last but not least, the rationale for picking ninth graders is that since this approach is linked to greater levels of critical and creative thinking, they are capable of handling it. They have had nine years of exposure to the English language.

### **Instruments of the Study**

1. An Observation Rubric and
2. A Questionnaire (Attitudinal scale)

### **Lesson plan materials**

The teaching material was taken from units three, four, five, and six. Lesson plans consisted of VTS reading texts, Student's Book, Activity Book, worksheets, a whiteboard, a marked pen, a data show projector, sketching, real objects, and wordless pictures. These lesson plans were developed to teach reading sub-skills through VTS to Jordanian EFL ninth-grade students. With the use of these lesson plans, teachers should be able to assist their students in developing their reading sub-skills throughout the first semester of the 2022–2023 academic year. They also want to make the participants' reading abilities better.

### **The lesson plans' content accuracy**

The lesson plans' content validity was established by subjecting them to the same jury that approved the study's instrumentation. The lesson plans were looked over by the jury and approved. The comments we got indicated that the lesson plans were suitable, understandable, and comprehensive enough to achieve the goal of the study.

### **An Observation Rubric**

To evaluate participants' engagement during reading classes a single analytical rubric was developed (Appendix --, p. --.). It is based on the eight reading sub-skills: guessing the meaning of new vocabulary in the context, extracting specific and main information, drawing mental images, building and activating schema, communicating through oral language, inferring, understanding, and answering questions. The analytic rubric is a two-dimensional rubric with achievement levels represented by columns and assessment criteria represented by rows.

### *A Questionnaire (Attitudinal scale)*

Following the experiment, an attitudinal questionnaire was developed and administered to the experimental groups to assess students' attitudes toward VTS instruction (Appendix 2). The attitudinal questionnaire was split into two sections: the first was used to gather background data about the individuals, and the second required them to reply to 32 items on a five-point Likert scale: strongly agree (5), agree (4), not sure (3), disagree (2), and strongly disagree (1). The questionnaire measured the three domains of attitudes toward using the VTS in reading classes (10 items), attitudes toward reading sub-skills through the VTS (11 items), and attitudes toward reading sub-skills through the VTS (11 items).

### **Instrumental Validity and Reliability**

#### **Validity of the observational rubric**

An expert jury made up of English language instructors determined the reliability of the observational rubric. The observational rubric's suitability and appropriateness for assessing the audience member's participation in the reading class were to be determined by the jury. Following the necessary adjustments by the researcher, the observational rubric was deemed suitable for the investigation's goals.

Eight sub-skills were estimated by two raters in order to get data on the validity of the observation rubric. A two-way random effects model, intra-class correlations, and an ICC with 95% confidence intervals (CI) were also employed to assess inter-rater reliability. According to the findings, there was an adequate level of dependability between the two raters, with an absolute inter-rater agreement of 0.82. (Schlager et al., 2018).

#### **Questionnaire Validity and Reliability**

The validity of the questionnaire was determined by a jury of English instructors. The jury was tasked with deciding if the questionnaire's items were sufficient and appropriate for the study's participants and goal. The questionnaire was deemed suitable for the study's objectives after the researcher made the necessary adjustments.

To get beyond any language difficulties and get more easily credible findings, a translated and validated version of this questionnaire in Arabic was also created. Cronbach's alpha and test-retest methods were used to evaluate the reliability of the attitudinal questionnaire, as shown in Table 1.

*Table 1*

*Reliability Indices for the Attitudinal Questionnaire*

<b>Dimension</b>	<b>Alpha</b>	<b>Test-retest</b>
Attitudes toward using the Visual Thinking Strategy in reading classes	0.89	0.80
Attitudes toward the role of the teacher and her classroom management during VTS instruction	0.77	0.83
Attitudes toward reading sub-skills through the VTS	0.81	0.78
<b>Overall</b>	<b>0.86</b>	<b>0.89</b>

Table 1 shows that Cronbach's alpha coefficients for the attitudinal questionnaire dimensions were between (0.77-0.89) and (0.86) for the whole scale. Also, the test-retest coefficients for the three dimensions were between (0.78-0.83) and (0.89) for the whole scale, which was above the threshold value (0.70) (Cronbach, 1951).

## Data analysis

To answer the research questions, the following statistical analyses were conducted:

1. One-Way Multivariate Analyses of Covariance (One-Way MANCOVA) and univariate analysis were used to examine the impact of instructional modality on reading sub-skills and VTS stages.
2. Mean scores and standard deviations were taken to gauge participants' opinions on the use of the VTS modality on reading sub-skills among female EFL ninth-graders from Jordan.

## Study variables

The experimental group was taught using the VTS instructional program, which requires the use of visual thinking tools such as pictures, maps, videos, and acting out for every reading lesson.

## Results of the Study

**Results related to the first research question:** "To what extent were students engaged in reading classes?" To respond to this query, the mean scores and standard deviations across the eight reading sub-skills were computed. The following rubric was used to evaluate students' engagement in reading classes: Low (from 1 to less than 2); medium (from 2 to less than 3); and high (from 3 to 4). Table 23 illustrates the results.

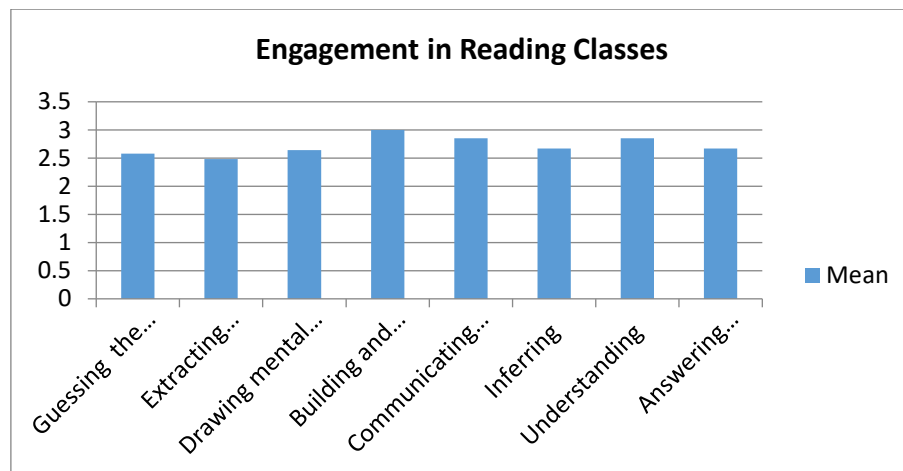
**Table 2**

**Levels of Students' Engagement in Reading Classes**

Sub-skill	Frequency (Percentage)				Mean	Std	Rank	Level of engagement
	1	2	3	4				
Guessing the meaning of new vocabulary in the context	4(12.1)	13(39.4)	9(27.3)	7(21.2)	2.58	.97	7	Medium
Extracting specific and main information	3(9.1)	17(51.5)	7(21.2)	6(18.2)	2.48	.91	8	Medium
Drawing mental images	3(9.1)	12(36.4)	12(36.4)	6(18.2)	2.64	.90	6	Medium
Building and activating schema	1(3.0)	9(27.3)	12(36.4)	11(33.3)	3.00	.87	1	High
Communicating through oral language	2(6.1)	9(27.3)	14(42.4)	8(24.2)	2.85	.87	2	Medium
Inferring	2(6.1)	11(33.3)	16(48.5)	4(12.1)	2.67	.78	4	Medium
Understanding	1(3.0)	10(30.3)	15(45.5)	7(21.2)	2.85	.80	2	Medium
Answering question	2(6.1)	14(42.4)	10(30.3)	7(21.2)	2.67	.89	4	Medium
<b>Overall</b>					<b>2.72</b>	<b>.68</b>		<b>Medium</b>

Table 2 shows that the level of students' engagement in reading classes ranged from 2.48 to 3.00, with medium levels of engagement (Figure 1). It was observed that students were most interested in "building and activating schema" (mean = 3.00), "communicating through oral language" (mean = 2.85), "understanding" (mean = 2.85), "inferring" (mean = 2.67), "answering questions" (mean = 2.67), "drawing mental images" (mean = 2.64), "guessing the meaning of new vocabulary in the context" (mean = 2.58), and "extracting specific and main information".





*Figure 1*  
*Levels of Students Engagement in Reading Classes*

**Results related to the second research question:** “What are the experimental group students’ attitudes towards using VTS?” The attitudinal questionnaire's three dimensions were broken down into mean scores and standard deviations, which were then calculated to provide an answer. For each domain of the attitudinal questionnaire, the means and standard deviations are shown in Table 24.

**Table 3**  
**Students’ Attitudes towards VTS per Domain**

Domain	Mean	St.d	Rank	Agreement Level
Attitudes toward using the Visual Thinking Strategy in reading classes	3.22	.25	1	Medium
Attitudes toward the role of the teacher and her classroom management during VTS instruction	3.18	.42	2	Medium
Attitudes toward reading comprehension skills through the VTS	3.07	.34	3	Medium
<b>Total</b>	<b>3.15</b>	<b>.27</b>		<b>Medium</b>

Table 3 shows that students' attitudes toward the VTS modality under study ranged from 3.07 to 3.22 with medium levels of agreement (Figure 2). Students reported the highest level of agreement (mean = 3.22) on the domain "Attitudes toward using the Visual Thinking Strategy in reading classes," followed by the domain "Attitudes toward the role of the teacher and her classroom management during VTS instruction" (mean = 3.18) and "Attitudes toward reading sub-skills through the VTS" (mean = 3.07). Furthermore, students in the experimental groups reported a medium level of attitudes toward the VTS modality (mean = 3.15).

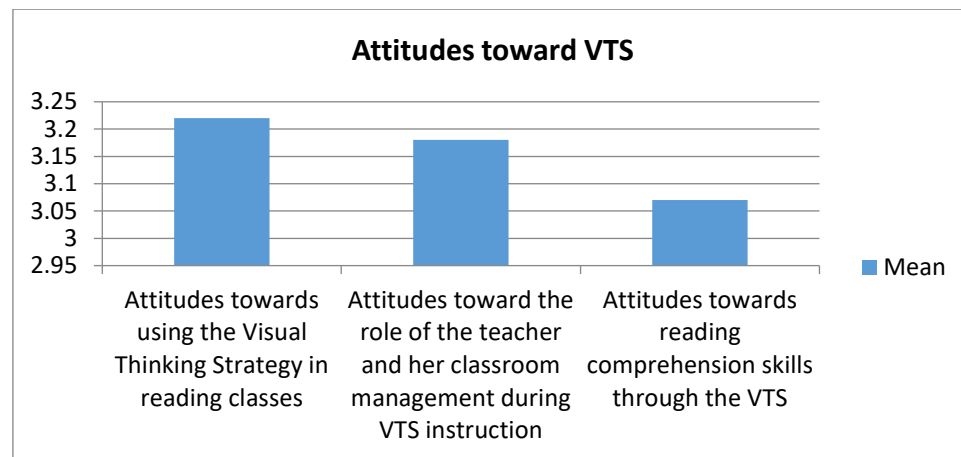


Figure 2

Mean along the three domains of the attitudinal questionnaire

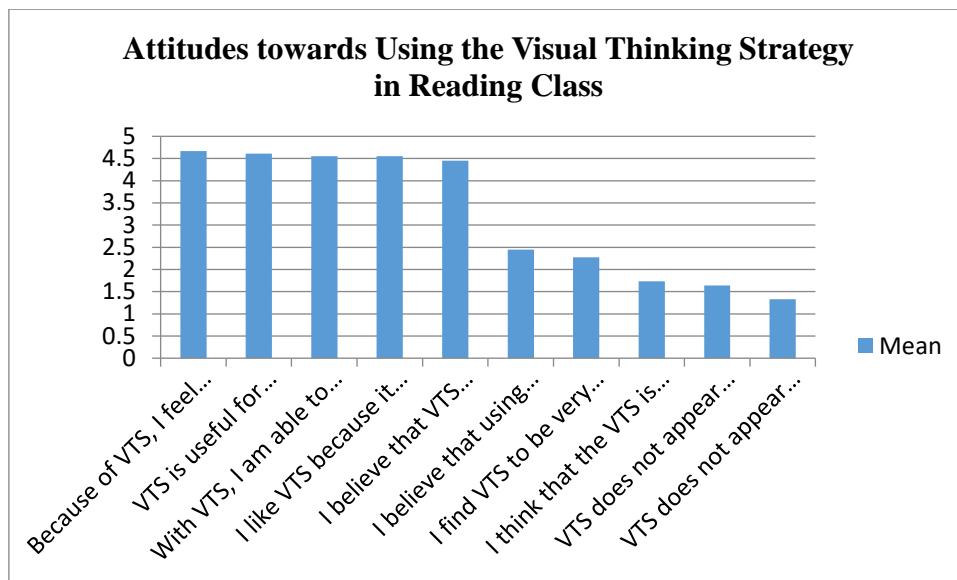
Furthermore, the means and standard deviations of students' attitudes along the attitudinal domains were calculated. The means and standard deviations for each item in the three domains are shown in Tables 25–28. Table 25 shows the average and standard deviation of how students feel about using visual thinking in the reading class domain.

Table 4

**Student's Attitudes towards Using the Visual Thinking Strategy in Reading Class Domain**

No.	Item	Mean	Std	Rank	Agreement level
4	Because of VTS, I feel more comfortable analyzing and discussing reading texts.	4.67	.60	1	High
5	VTS is useful for learning other subjects i.e. science and Arabic.	4.61	.66	2	High
6	With VTS, I am able to improve my English skills, particularly speaking.	4.55	.75	3	High
3	I like VTS because it encourages me to participate more in class.	4.55	.79	3	High
7	I believe that VTS inspired me to read other English-language texts.	4.45	.75	5	High
2	I believe that using VTS will help me understand the reading texts better.	2.45	1.28	6	Medium
1	I find VTS to be very interesting.	2.27	1.44	7	Medium
9	I think that the VTS is a waste of time.	1.73	.88	8	Low
10	VTS does not appear to be assisting me in improving my reading comprehension in any way.	1.64	.86	9	Low
8	VTS does not appear to be a good fit for my academic level.	1.33	.54	10	Low
<b>Total</b>		<b>3.22</b>	<b>.25</b>		<b>Medium</b>

Table 25 shows that the mean scores of students' attitudes toward using the Visual Thinking Strategy in the reading class domain ranged between (1.33 and 4.67) with low to high levels of agreement (Figure 3). Students reported the highest level of agreement (Mean=4.67) on the item "Because of VTS, I feel more comfortable analyzing and discussing reading texts", whereas, they reported the lowest level of agreement (Mean=1.33) on the item "VTS does not appear to be a good fit for my academic level".



**Figure 3**  
*mean scores of students' attitudes toward using the Visual Thinking Strategy in the reading class domain*

Table 4 shows the means and standard deviations for each statement of the “attitudes toward reading comprehension skills through the VTS” domain.

**Table 4**  
**Attitudes toward Reading sub- Skills through VTS**

No.	Item	Mean	Std	Rank	Agreement level
6	VTS assists me in deducing and predicting what the writer intended behind the lines.	4.33	.85	1	High
8	VTS assists me in comprehending the ideas of the text.	4.18	.92	2	High
5	VTS assists me in both asking and answering questions during the pre-while and post-reading stages.	4.09	1.07	3	High
4	VTS assists me in identifying key ideas and details.	4.03	1.19	4	High
7	VTS enabled me to communicate orally and participate in groups.	3.94	.86	5	High
9	VTS assists me in visualizing events in my mind and making connections between them.	3.91	1.13	6	High
1	VTS is an interesting strategy (VTS) that helps me guess the meaning of new words by confirming and clarifying word meaning through context.	2.48	1.25	7	Medium
3	VTS enables me to use my prior knowledge to understand new reading texts.	2.61	1.39	8	Medium
2	VTS assists me in describing, categorizing adjectives, and planning for the future by using imagery.	2.00	1.17	9	Medium
12	VTS cannot assist me in connecting my previous knowledge to the new one.	1.88	.93	10	Low
11	VTS did not allow us to collaborate with our partners.	1.82	.95	11	Low
10	VTS is difficult to use in comprehending reading text.	1.61	.75	12	Low
<b>Total</b>		<b>3.07</b>	<b>.34</b>		<b>Medium</b>

With low to high degrees of agreement, Table 26's mean scores for students' attitudes toward the "reading sub-skills through the VTS" domain ranged from 1.61 to 4.33. (Figure 4). Students reported the highest level of agreement (mean = 4.33) on the item "VTS assists me in deducing and predicting what the writer intended behind the lines," whereas they reported the lowest level of agreement (mean = 1.61) on the item "VTS is difficult to use in reading text."

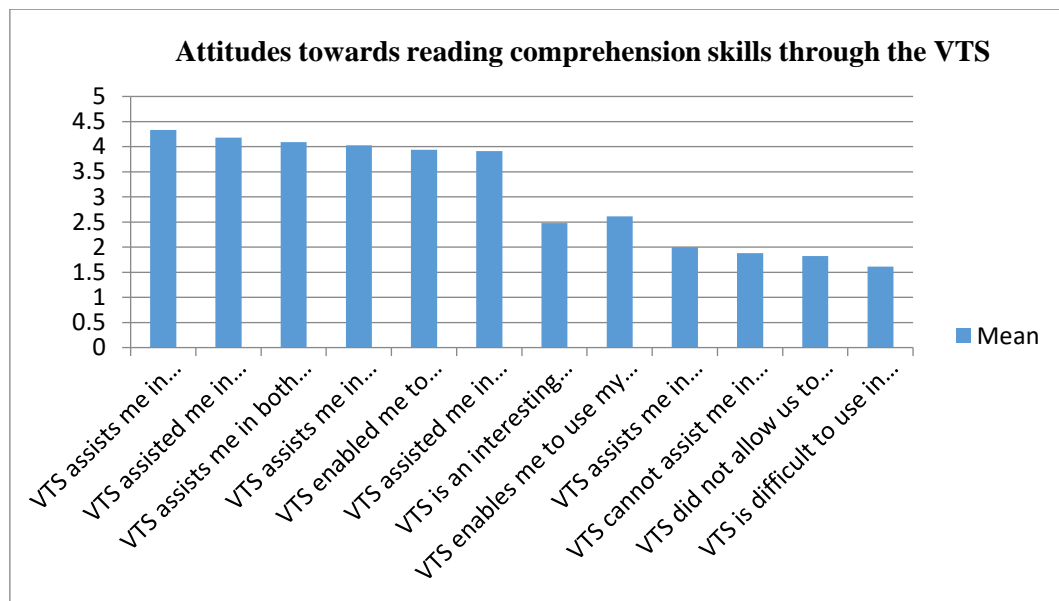


Figure 4

the mean scores of students' attitudes toward "reading comprehension skills through the VTS domain"

The averages and standard deviations for each statement in the "Attitudes regarding the role of the instructor and her classroom management during VTS instruction" domain are shown in Table 5.

Table 5

Attitudes toward the Role of the Teacher and Classroom Management during VTS instruction

No.	Item	Mean	Std	Rank	Agreement level
4	The teacher could intervene at any time to assist students in the teaching-learning process.	4.42	.83	1	High
5	The teacher gave us plenty of time to talk about the pictures and draw our mental images.	4.24	1.17	2	High
7	The teacher is aware of the student's learning styles so she gives us plenty of different activities.	4.12	.86	3	High
6	The teacher creates classroom rules for reading skills.	4.00	1.03	4	High
8	The teacher provides us with different learning resources.	3.97	1.10	5	High
1	The teacher explained the VTS and demonstrated how to apply it to the reading text for students.	2.70	1.49	6	Medium
3	The teacher successfully managed the teaching-learning process.	2.48	1.37	7	Medium
2	The teacher created a cozy atmosphere in the classroom.	2.33	1.41	8	Medium
9	The group discussion is ineffective because the teacher does not immediately check my personal response.	1.82	.92	9	Low
10	In teaching VTS, the teacher followed a monotonous routine.	1.67	.85	10	Low
<b>Total</b>		<b>3.18</b>	<b>.42</b>		<b>Medium</b>

The mean scores of the students' "attitudes toward the role of the instructor and her classroom management during VTS instruction" domain are shown in Table 5 and vary from 1.67 to 4.42 with low to high levels of agreement (Figure 5). Students reported the highest level of agreement (mean = 4.42) on the item "The teacher could intervene at any time to assist students in the teaching-learning process," whereas they reported the lowest level of agreement (mean = 1.67) on the item "In teaching VTS, the teacher followed a monotonous routine."

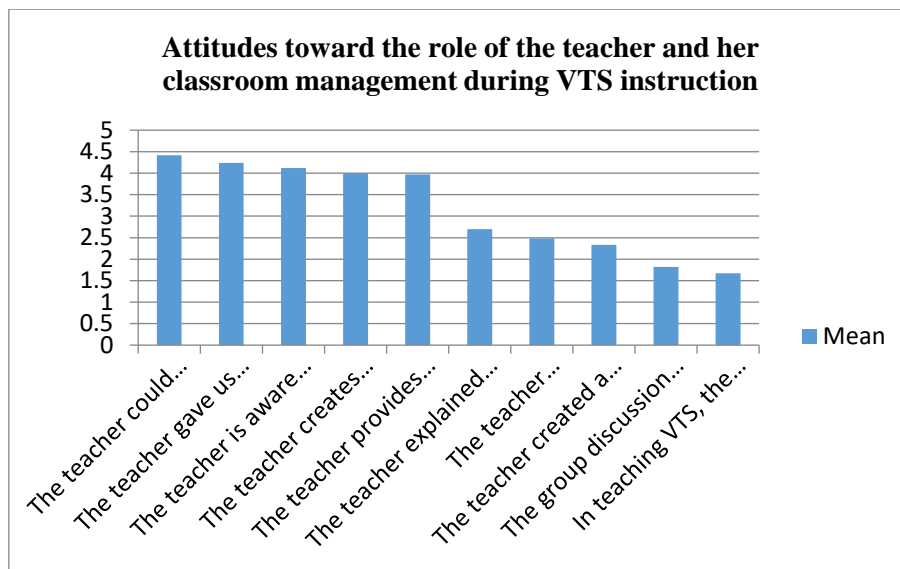


Figure 5  
 Mean scores of students' "Attitudes toward the role of the teacher and her classroom management during VTS instruction"

### Discussion of the Results of the First Question of the Study

In order to respond to the first question that was posed in the research, "To what extent were students engaged in reading classes?" Calculations were made to determine the mean scores and standard deviations for each of the eight reading skills. Low (from 1 to less than 2), medium (from 2 to less than 3), and high were the categories included in the rubric for assessing the level of engagement shown by students in their reading classes (from 3 to 4). During the process of reading lessons, the observational rubric was also used to learn more about the different ways teachers taught and how the students behaved.

It was seen that students were most interested in "building and activating schema" (mean = 3.00), "communicating through oral language" (mean = 2.85), "understanding" (mean = 2.85), "inferring" (mean = 2.67), "answering questions" (mean = 2.67), "drawing mental images" (mean = 2.64), "guessing the meaning of new vocabulary in the context" (mean = 2.58), and "extracting specific and main information" (mean = 2.48).

The schema was activated by designing pre-, during-, and after-reading activities, as is clear from the lesson plans and the students' responses in the classrooms. Because it involves individual experience, it succeeds in drawing students to reading and aids them in growing their interest, boosting their reading speed, and forming good reading judgments. In psychology and cognitive science, a "schema" is a phrase that represents a systematic pattern of thought and action. Attention and the absorption of new information are influenced by the schema. Schema, or what is known as "activating prior knowledge," is used by students to arrange prior information, connect new information to the previous one, and create a framework for further comprehension.

Speaking and understanding are the productive and receptive abilities needed for spoken communication. Discussion, role-playing, and cooperative learning enhance oral communication. Students worked in small groups through cooperative learning to help one another master the content. This is consistent with the study's findings that indicate cooperative

learning improved students' English reading skills (Seetape, 2003; Wichadee, 2005). As in this picture, two students discussed the texts' ideas.



In addition, students acted out different roles, as can be seen in the picture below.



Another piece of evidence that demonstrates the students' preference for VTS is the fact that they actively participated in the activities as follows:

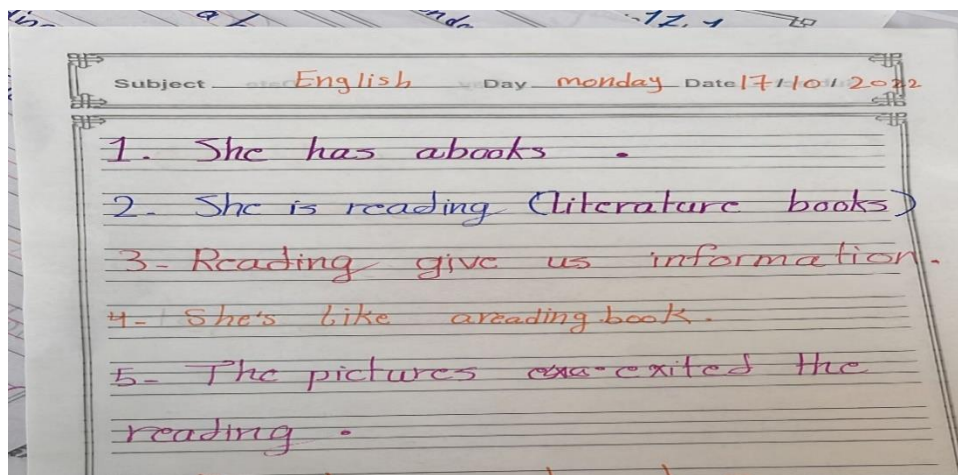
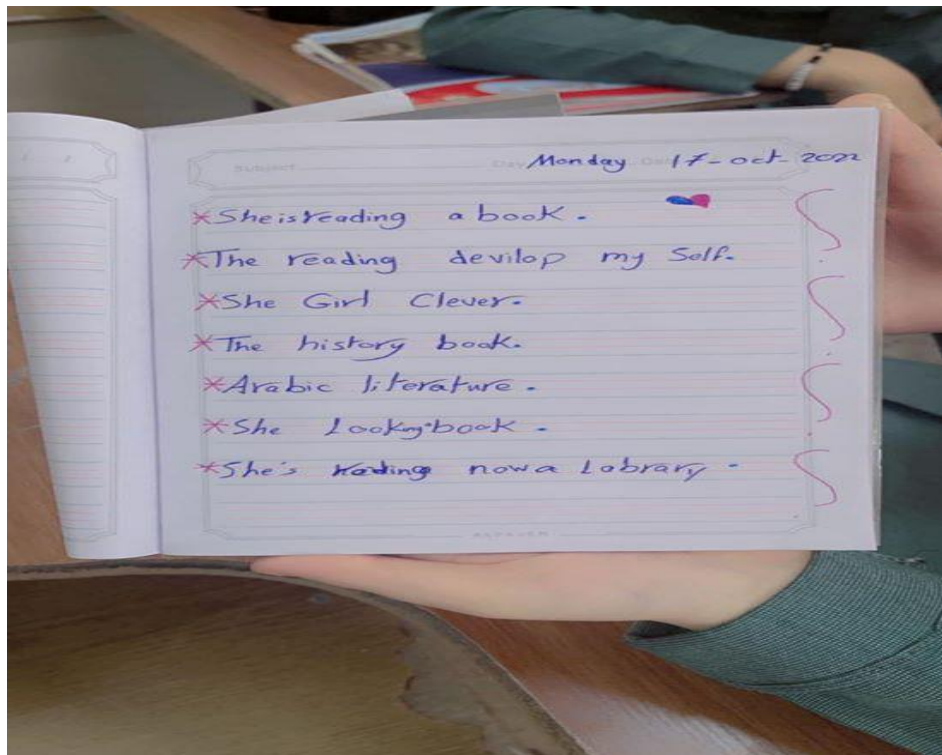




Although, evaluating students' ability to draw mental images is difficult because some lack the necessary artistic ability, some students are gifted and have spatial intelligence, while others struggle to form mental images because they do not fully comprehend the material. The image below was drawn by one of these exceptionally gifted students to help her visualize what she had learned from the reading assignment about the importance of reading in a library. The illustration depicts a scene in the library (lesson 1).



In this study, there was a connection between utilizing context clues to deduce the meaning of unfamiliar vocabulary and extracting specific and essential information. But, some students struggled to glean specific and important information for the following reasons: first, problems with vocabulary (e.g., spelling mistakes such as labrary); second, problems with sentence structure (e.g., two subjects such as "she girl"); and third, grammatical use (e.g., missing verbs, "she girl is clever") as observed from their responses in the classroom discussion.



### Discussion of the Results of the Second Question of the Study

In order to provide an answer to the second question posed by the study, "What are the attitudes that the students in the experimental group have towards using VTS?" The mean scores and standard deviations for each of the attitude questionnaire's three parts were found by doing some statistical analysis.

Students' attitudes toward the VTS modality under investigation ranged from 3.07 to 3.22, with moderate levels of agreement. Students agreed most with the domain "Attitudes toward using the Visual Thinking Strategy in reading classes" (mean = 3.22), followed by "Attitudes toward the role of the teacher and her classroom management during VTS instruction" (mean = 3.18) and "Attitudes toward reading sub-skills through the VTS" (mean = 3.07). This result is consistent with the findings of Shabiralyani et al., (2015). They found that the majority of teachers and students supported the use of visual aids. According to the students' attitudes toward VTS, most of them have agreed on the item "Because of VTS, I feel more comfortable analyzing and discussing reading texts." Because this strategy encourages students to discuss and analyze images used in the classroom in groups. When they discuss the images, there are numerous correct answers to the three open questions, making them feel more at ease and less anxious.

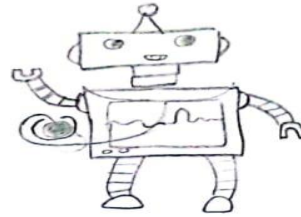
Moreover, collaborative work in the arts allows for verbal illustration and explanation of details, abstractions, and dispositional knowledge. Talking about different kinds of images leads to verbal, visual, and physical exchanges that help people learn to focus, strategize, distinguish, and explain parts, as well as combine possibilities through future scenarios.



Also, the drawing strategy is primarily concerned with conveying the visual image of a certain word or the context of the text, so the drawing activity strategy improves students' reading comprehension in the EFL classroom. Although a teacher does not have to be an artist, a simple drawing can have a powerful effect in allowing students to store language in their minds upon sight of the visualization of words. Requesting that students comment on and discuss the drawings opens up a channel of reciprocal discussion, which further pivots dialogue among the students, enhancing total classroom collaboration. Even though the drawings that the students produced are not of professional quality, as can be seen from the drawings themselves, they provide the instructor with an indication of the student's level of comprehension of the assigned

reading, and they are a representation of the student's internal thought process.

Picture  
①



Robot is going to treat us in the future.

picture  
②



What we will become in the future.

⇒ I'm going to become a doctor.

⇒ I'm going to become an engineer.

I'm going to become a policewoman.

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Conceptual comprehension, the development of symbol manipulation skills, and participation in inquiry-based practices like formulating ideas, using evidence, providing explanations, and arguing for a position are all made possible by thinking about the activity of teams of people working on a variety of problems over time.

Both print-based, and multimodal text reading depend significantly on the reader's schema. Depending on how we read it, any new text—whether it be words or images—will provoke different reactions and new interpretations as well as new meanings. Reading text and looking at images triggers a recursive, interactive process in which we connect words, images, and their content to prior experiences to produce new meaning. A brand-new text will cause these novel responses and perceptions. These are mental processes the reader goes through.

Damayanti et al. (2020) concluded that students like this strategy, and Lhadon (2019) found students enthusiastically participated in the activities with confidence and excellent effort. According to Zelvis (2008), even while the use of VTS as a teaching approach did not significantly increase performance for students with low motivation, there was a significant main effect of motivation for highly motivated students on the comprehension subtest. While reading (1975) discovered a weak but significant relationship between reading attitude and mental imagery.

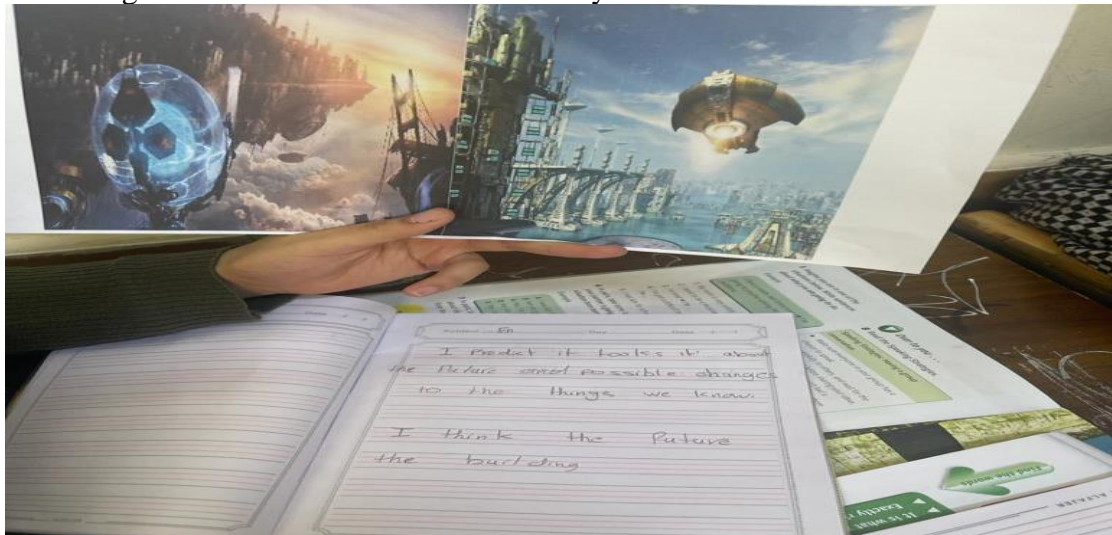


Furthermore, students in the experimental groups had moderate attitudes toward the VTS modality (mean = 3.15). The students' preference may be because first, they feel more comfortable analyzing and discussing reading texts; second, VTS is useful for learning other subjects, i.e., science and Arabic; third, with VTS, they are able to improve their English skills, particularly speaking; fourth, VTS encourages me to participate more in class; and finally, VTS inspired me to read other English-language texts.

On the statement "VTS does not appear to be a good fit for my academic level," there is the least amount of consensus. It makes sense since it goes against their stated preference for using VTS in other subjects such as science and Arabic. In these subjects, students can sketch the text they are reading. For example, Arabic is similar to English because it consists of four skills. Arabic text can be visualized and sketched in the same way as English text.

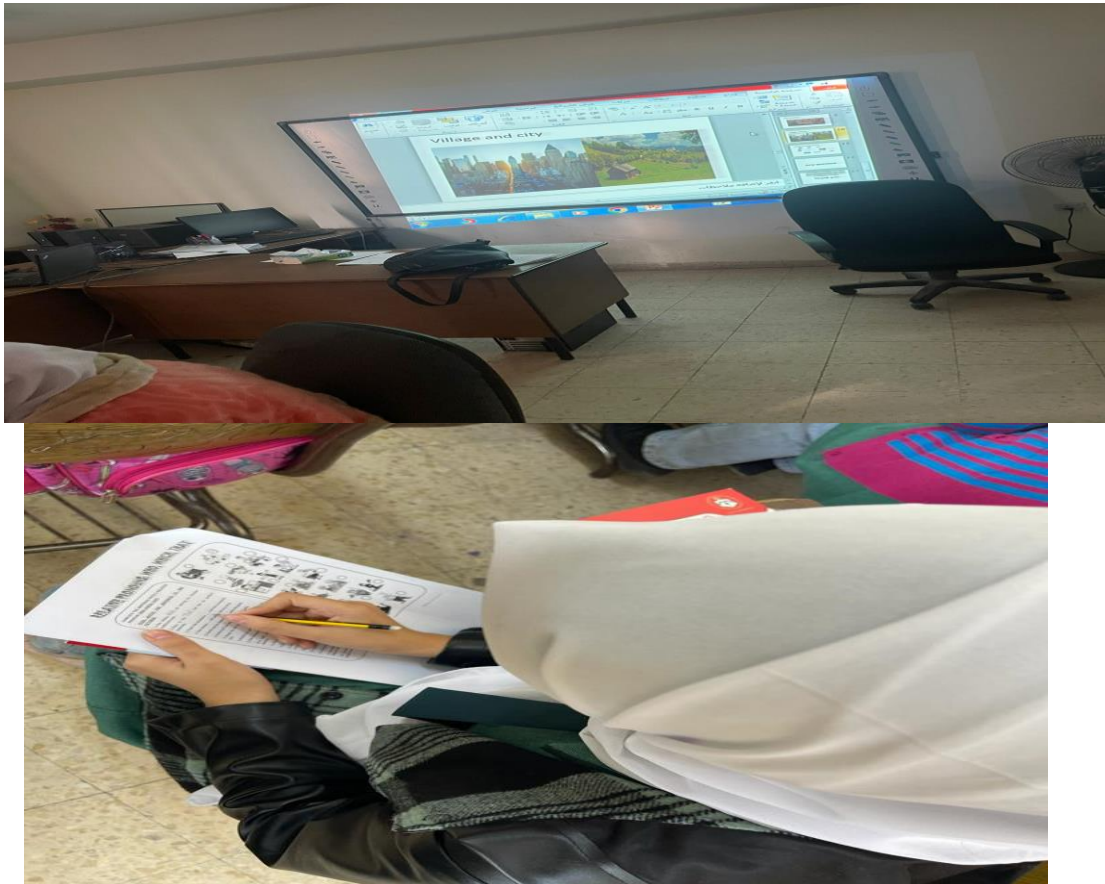
Students' attitudes toward the domain of "reading sub-skills through the VTS" ranged from 1.61 to 4.33, with low to high levels of agreement. Students agreed the most (mean = 4.33) on the item "VTS assists me in deducing and predicting what the writer intended behind the lines," while they agreed the least (mean = 1.61) on the item "VTS is difficult to use in reading text." Students were able to predict what would happen in the future based on their prior knowledge, higher thinking, and imagination abilities, as demonstrated by this image.

In addition, the teacher provides worksheets for them to practice prediction. After the students read the text line by line and sketched the mental images, the teacher asked them while-reading questions, which the students answered, and they practiced predicting what the intended meaning of the writer was and what else they could infer from the text.



The mean scores of students in the domain "attitudes toward the role of the teacher and her classroom management during VTS instruction" ranged from 1.67 to 4.42, with low to high levels of agreement. Students agreed most strongly (mean = 4.42) on the item "The teacher could intervene at any time to assist students in the teaching-learning process," while they agreed least strongly (mean = 1.67) on the item "In teaching VTS, the teacher followed a monotonous routine." This strategy is facilitated by the teacher. The teacher presents the selected images, keeps a file for images, implements the VTS instructional program, prepares the questions, guides the discussion, and assists her students in following the same routine. Visualization skills can be taught and strengthened by the teacher through guided instruction and practice.

Although VTS is a type of routine, students do not consider it monotonous because each lesson has a different topic with a different image, and the teacher sometimes shows these pictures using the 'data show' in the computer laboratory as a kind of change and gives them worksheets with pictures as shown in the two pictures below.



## Conclusions

The research's results might support the following conclusions:

1. The domain "Attitudes toward using the Visual Thinking Strategy in reading classes" received the highest level of agreement from students, followed by "Attitudes toward the role of the teacher and her classroom management during VTS instruction" and "Attitudes toward reading sub-skills through the VTS".
2. It was seen that students were most interested in "building and activating schema", "communicating through oral language", "understanding", "inferring", "answering questions", "drawing mental images", "guessing the meaning of new vocabulary in the context", and "extracting specific and main information".
3. Students' attitudes toward the domain of "reading sub-skills through the VTS" ranged from low to high levels of agreement. Students agreed most with the statement, "VTS helps me figure out and guess what the author meant behind the lines," and least with the statement, "VTS is hard to use when reading text."



4. Moreover, visualization has the potential to engage students in the teaching and learning of reading. The students read the text on their own and attempted to comprehend it through discussions of images or sketches they draw as a representation of their understanding with other students in the group. Our students should be encouraged to take an active role in their reading because reading is a cognitive and interactive process where the reader interacts with the text. Students also favored VTS and engaging in conversation with friends. The students were able to comprehend reading more fully than they had previously by having an excellent discussion.
5. The best ways for students who are falling behind to improve their reading comprehension are to use strategies like anticipating, activating background knowledge, and visualizing.
6. These days, visuals are everywhere, and they dominate students' lives. As a result, a lack of pedagogical attention to the abilities and methods required for making sense of visual pictures and visual design aspects poses significant challenges to teachers at a time.

## References

- Al-Akloby, S. (2001). *Teaching and learning English vocabulary in Saudi Arabian public schools* [doctorial dissertation, University of Essex]. Essex, United Kingdom. <http://hdl.handle.net/10068/541994>
- Al-Damiree, R., & Bataineh, R. F. (2016). Vocabulary knowledge and syntactic awareness as potential catalysts for reading comprehension among young Jordanian EFL students. *Journal of Teaching and Teacher Education*, 4(1), 53-59. <https://doi.org/10.12785/jtte/040106>
- Al-Madany, R. (2010). *Motivation towards Reading in English among High School Saudi Graduate* [ Master thesis, king Saud University]. Academia.edu
- Burger, K. & Winner, E. (2000). Instruction in Visual Art: Can It Help Children Learn to Read? *The Journal of Aesthetic Education. Special Issue: The Arts and Academic Achievement: What the Evidence Shows*, 34 (3/4) 277-293 University of Illinois Press. <https://doi.org/10.2307/3333645>
- Carrell, P. L., Gajdusek, L., & Wise, T. (1998). Metacognition and EFL/ESL reading. *Instructional Science*, 26(1-2), 97-112. <https://doi.org/10.1023/A:1003092114195>
- Damayanti, P. R., Fitriani, S. S., & Marhaban, S. (2020). The visualization Metacognitive Strategy To Improve Reading Comprehension. *English Education Journal*, 11(4), 498-511. <https://jurnal.usk.ac.id/EEJ/article/view/17226>
- Dennis, D. V. (2008). Are Assessment Data Really Driving Middle School Reading Instruction? What we can learn from one student's experience. *Journal of Adolescent and Adult Literacy*, 51, 578-587. <http://dx.doi.org/10.1598/JAAL.51.7.5>
- Dörnyei, Z. (2001). *Motivational strategies in the language classroom* (Vol. 10). Cambridge University Press. <https://doi.org/10.1017/CBO9780511667343>
- Durak H. & Saritepeci, M. (2017). Investigating the Effect of Technology Use in Education on Classroom Management Within the Scope of the Fatih Project. *Çukurova Üniversitesi Eğitim Fakültesi Dergisi* 46(2) 41-457. <https://doi.org/10.14812/cuefd.303511>
- Echeverri Acosta, L.M. & McNulty Ferri, M. M. (2010). Reading Strategies to Develop Higher Thinking Skills for Reading Comprehension. *Profile*, 12(1), 107-123. Retrieved July, 15, 2022, from: <http://www.scielo.org.co/pdf/prf/v12n1/v12n1a08.pdf>

- Ghazanfari, M. (2009). The Role of Visualization In EFL Learners' Reading Comprehension And Recall of Short Stories. *Researchgate*, 1-23. Retrieved July, 25, 2022 from: <https://www.researchgate.net/publication/228418627>
- Guthrie, J. T., & Wigfield, A. (2000). *Engagement and Motivation in Reading*. In M. L. Kamil, P. B. Mosenthal, P. D. Pearson, & R. Barr (Eds.), *Handbook of Reading Research* (3rd Ed.). Longman.
- Housen, A. (1983). *The eye of the beholder: Measuring aesthetic development* [unpublished Doctoral dissertation]. Harvard University. <https://shortest.link/kd97>
- Lhadon, L. (2019). *The Use of Visual Imaginary Strategy to Enhance English Reading Comprehension Skills of Grade Four Bhutanese Students*. (Master thesis, Rangsit University). Retrieved Oct, 9, 2022, from: <https://rsuir-library.rsu.ac.th/handle/123456789/148>
- Masgoret, A. M., Bernaus, M., & Gardner, R. C. (2001). Examining the role of attitudes and motivation outside of the formal classroom: A test of the mini-AMTB for children. *Motivation and second language acquisition*, 12, 281-295.
- Merisuo-Storm, T. (2007). Pupils' attitudes towards foreign-language learning and the development of literacy skills in bilingual education. *Teaching and teacher education*, 23(2), 226-235. <https://doi.org/10.1016/j.tate.2006.04.024>
- Mikulecky, B. S. & Jeffries, L. (1986). *Reading Power, Reading Faster, Thinking Skills, Reading for Pleasure, Comprehension Skills*. Addison-Wesley Publishing Company, Inc. <https://shortest.link/jgGc>
- Oxford, R. L. (1990). *Language learning strategies: What every teacher should know*. Heinle & Heinle.
- Rader, L. A. (2010). Teaching Students to Visualize: Nine Key Questions for Success. *Preventing School Failure*, 54(2), 126-132. <https://doi.org/10.1080/10459880903217937>
- Raiyn, J. (2016). The Role of Visual Learning in Improving Students' High-Order Thinking Skills. *Journal of Education and Practice*, 7(24), 115-121.
- Schlager, A., Ahlqvist, K., Rasmussen-Barr, E., Bjelland, E. K., Pingel, R., Olsson, C., & Kristiansson, P. (2018). Inter-and Intra-Rater Reliability for Measurement of Range of Motion in Joints Included in Three Hypermobility Assessment Methods. *BMC Musculoskeletal Disorders*, 19(1), 1-10. <https://doi.org/10.1186/s12891-018-2290-5>
- Seetape, N. (2003). *Effects of cooperative learning on English reading achievement and learning behaviors of mathayomsuksa three students in Kanchanaphisekwittayalai Uthaitani School*, [Unpublished Master thesis]. Kasetsart University.
- Shabiralyani, G., Hasan, K. S., Hamad, N., & Iqbal, N. (2015). Impact of Visual Aids in Enhancing the Learning Process Case Research: District Dera Ghazi Khan. *Journal of education and practice*, 6(19), 226-233.
- Sheorey, R., & Mokhtari, K. (2001). Differences in the metacognitive awareness of reading strategies among native and non-native readers. *System*, 29, 431-449. [https://doi.org/10.1016/S0346-251X\(01\)00039-2](https://doi.org/10.1016/S0346-251X(01)00039-2)
- van den Broek, P., & Espin, C. A. (2012). Connecting cognitive theory and assessment: Measuring individual differences in reading comprehension. *School psychology review*, 41(3), 315-325. <https://doi.org/10.1080/02796015.2012.12087512>

- Wichadee, S. (2005). The effects of cooperative learning on English reading skills and attitudes of the first-year students at Bangkok University. *BU academic Review*, 4(2), 22-31. <https://shortest.link/kdgA>
- Wilinkiewicz-Górniak, L. (2019). The Use of Visuals and Visual Aids for More Effective Language and Skills Teaching. *Conference: 27th International IATEFL Poland Conference At Wrocław*. Retrieved July,26, 2022 from: <https://www.researchgate.net/publication/337647228>
- Young, D. J., & Oxford, R. (1997). A gender-related analysis of strategies used to process input in the native language and foreign language. *Applied Language Learning*, 8(1), 43-73.
- Zelvis, R. R. (2008). *The Effects of Visual Thinking Strategies on Reading Achievement of Students with Varying Levels of Motivation* [Doctoral dissertation, Western Connecticut State University]. West collections. <https://shortest.link/jvie>
- Zhao, X. (2015). The Influence of Learners' Motivation and Attitudes on Second Language Teaching. *Theory and Practice in Language Studies*, 5(11), 2333- 2339. DOI: <http://dx.doi.org/10.17507/tpls.0511.18>