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**"The Effect of Visual Thinking on Developing  
the Adult Learners' English Language Fluency."**

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## **Abstract**

This study aimed to design a program based on visual thinking (VT) to develop the adult learners' English Language Fluency (ELF). The study started with literature review and previous studies related to VT, visual literacy, writing ability and writing fluency (WF). The researcher designed the research program, and the instruments of measuring the learners' progress including the WF components list, the pre / posttest, the rubric, and the participants' questionnaire. Participants were 14 adult learners (N= 14), with Arabic as their first language; enrolled at the upper intermediate level, Telecom Egypt Training Institute (TETI). They received a five-week intensive English language instruction, two sessions a week, to boost the learners' WF where the researcher was the instructor. The learners' scores on the pre / posttest were statistically analyzed using T-test and the effect size factor. In addition, a qualitative analysis of the learners' progress was conducted and analyzed. Both quantitative and qualitative analysis revealed the positive effect of using VT on developing the adult learners' English language fluency.

**Keywords:** Visual Thinking, Visualization, language Fluency, Writing Fluency

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## **List of Abbreviations**

- **English Language Fluency: ELF**
- **Visual Thinking: VT**
- **Writing Fluency: WF**
- **Telecom Egypt Training Institute: TETI**

# **Chapter one**

## **Background and**

### **Problem**

## **Chapter One**

### **Background and Problem**

#### **Introduction**

People are living in a visually rich and screen-based world, being stimulated by visual media and communication instruments. Visual thinking (VT) is a visual problem solving method, which shall be encouraged for 21st century learners. Hundhausen et al. (2002) proceeded into this direction in their meta-study and found that one of the key features leading to successful learning results is the involvement or engagement in which learners are committed to during learning with visualization (e.g., watching vs. interacting). VT, in fact, is a visual aspect of critical thinking, cognitive load theory, complex learning, constructivism, metacognition, and scaffolding. VT is related to all effects around people and their lives.

VT is a Constructivist teaching trend grounded in the extensive research of the cognitive psychologist Abigail Housen and her collaboration with veteran museum educator Philip Yenawine. It is a learner centered, interactive, interpretive strategy that requires energetic participation. Learners create knowledge as they build from and on their personal and social backgrounds. The facilitated VT discussion “efficiency relates to its structure: it activates and builds on existing skills and interests, is developmentally based, engages peer interaction, and gradually escalates challenges” (Yenawine& Miller, 2014, p. 2).

VT employs strategically selected and sequenced art images that develop learners' abilities to notice deeply, think critically, and reason with evidence as they articulate personal interpretations and build upon the ideas of others within a collaborative group setting (Housen, 2002). A consequence of the shift from an individual learner using visualization to collaborating learners using visualizations leads to more complex and more important

learning processes because of the collaborative work. Visualization tools have a positive major effect on the aspects of collaboration in which learners “Effectively teach each other, bringing new observations to light, offering opposing views, and ever widening the discussion” (Housen, 2007, p. 125).

Evidence-based reasoning supports critical thinking and problem solving especially when it is applied, in relation to VT, with learners trying to enhance the quality of their language. The learners anticipate evidence-supported arguments in the discourse of others and, when presented with them, are discerning about their quality (NGA Center, 2010). In addition to developing a well-focused, well-supported discussion, using relevant reasons and evidence, which leads to clarity of thoughts, with smooth transitions from one, thought to another.

Evidential reasoning is a hallmark of VT and solicited explicitly by the second question of the questioning sequence of VT: “What do you see that makes you say that?” (Housen, 2001; VUE Staff, 2001). As learners answer this question with concrete visual proof from featured media, they not just justify their reasoning, but also conjointly habitually counter the various interpretations of peers. This feature trains the constructive analysis of others’ use of proof, with continual VT practice.

VT uses art to teach thinking, communication skills, and visual literacy to young people (Housen& Yenawine, 2000). All types of visual media can contribute to language development. Videos, pictures, visualized mental images, and even texts could have essential roles in the development process. During VT lessons, all learners have an opportunity to illustrate what they decode, from their perspective. Learners examine, express their opinions about it, and provide evidence to explain their interpretive comments.



VT helps learners better manage learning objectives and achieve academic success. Learners are required to evaluate and interpret information from various sources, incorporate new knowledge with what they already have acquired and think critically to improve WF.

VT activities help learners enhance their vocabulary acquisition, imaging, building and activating schema. VT also helps learners to identify main ideas and details, in addition to questioning, inferring, communicating through oral language, and acquiring and retaining knowledge, which could be invested in enhancing the learners' fluency.

VT can be an attempt to find a new writing strategy, which helps learners, or decoders become more engaged with the written product they are producing. Writing becomes a personal issue because every decoder's mental image is unique, based upon existing schemas. Visualization is used to stimulate higher thinking abilities by directing learners to deepen thinking through decoding previewed visual media. Questioning, inferring, making connections, analyzing, evaluating, comparing and contrasting are common components a learner using visualization should acquire and invest to enhance his WF. "Underlying these components are more complicated cognitive functioning capabilities such as translating ideas into written language as well as executive functioning skills that include conscious attention, planning, reviewing, revising, and strategies for self-regulation" (Berninger & Amtmann, 2003, p.345-363; Berninger et al., 2006, p.165-198). However, more numerous components rather than limited skills such as interaction, interpretation, flexible thinking, organizing, starting tasks and staying focused on them to completion, planning and prioritizing can be fruitful processes when practicing VT.

In VT, learners are asked to provide chunks of written or spoken organized thoughts to describe a previewed visual media (main idea) and an explanation of what is in the media to support it (details). Questioning is the act of asking, probing, and wondering. By asking

questions, writers pursue the unknowns of their story (Mantione & Smead, 2003). Research has shown that in order for learners to comprehend text, questions need to leave room for learners to struggle with meaning, rather than just point to answers (McKeown & Beck, 2001).

A trained VT facilitator starts a discussion about the visual media by asking a series of questions to provoke learners' thoughts to provide visual evidence for what they decoded such as: 1) What is going on in the visual media? 2) What makes you say that? And 3) What more can you find? Suparno (2001: 10-11), states that in essence the instructor acts as a facilitator who is responsible for providing learning experiences that enable learners to take responsibility in the learning activities. Instructors provide activities that stimulate the learner's curiosity in helping learners express and communicate their ideas. A facilitator provides means of stimulating learners to think productively, encourages learners to monitor, evaluates and demonstrates learners' produced thoughts to enhance the learners' WF. In VT, group discussions have a purpose of building meaning from a visual media, and learners' thinking is clarified through questioning.

Furthermore, inferring is a critical ability to be enhanced. It requires writers to make and revise predictions and use their own perspectives of the world to clarify and gain meaning from previewed visual media. "Competent writers need to "investigate between the lines," moving beyond the obvious, but still staying focused on the text" (Mantione & Smead, 2003, pp125-136). Using VT does not depend only on videos or images but also on visual media including texts to deepen the learners' visual thinking. The strategies described above, including vocabulary acquisition, imaging, identifying main idea and detail, questioning, inferring, and communication through oral language are all essential components of the good

VT writer. The components of VT include the same strategies. Therefore, this present study attempted to examine the program as a supplemental method of enhancing WF.

The notion of fluency is most often associated with spoken-language. The present study investigates the relevance of considering fluency in writing. The basic argument for raising this question is empirical. It follows from a focus on difficulties in written language as manifestations of different problems, which should be investigated separately; based on their symptoms.

Fluency plays an important role in language production. Obtaining language fluency is one of the most complex activities for adult learners. It embeds the development of a designed idea, the capture of mental representations of knowledge, and of previous experience with subjects. "Language learners are often judged as fluent users of language if they use their second language with ease and in a native-like way" (Housen, Kuiken, & Vedder, 2012, pp. 47-69). "Fluency activities typically focus on the communication of messages, not language forms, and get the learners to do easy tasks at faster-than-usual speeds" (Nation & Newton, 2009, pp. 38-64). Fluency development activities need to be message focused; an error focus works against fluency because if there is correction learners will slow down in favor of correctness. "In a writing course, feedback on correctness can occur in a different part of the writing program and can depend on the types of writing learners are doing" (Nation, 2014. pp. 11-25).

Fluency is an essential part of a language learner's ability. Fluency is clarified as; "the ability to create texts without relying too much on memory"(Lenski & Verbruggen, 2010. P.176). Brand and Brand (2006) address fluency mainly in terms of automaticity. Towell (2012, p. 56) argues that a learner is fluent if his or her knowledge is available via practiced processes. "The more automatic the recall of a language pattern, the easier and more fluent

the production becomes" (Towell, 2012). "While a writer is considered fluent when s/he is able not only to put words on paper without exerting excessive effort, but is also able to establish relationships between ideas. Recent evidence suggests that input plays an essential role in the development of fluency" (Williams, 2012, p. 322).

"The ability to write quickly with few pauses and hesitations is important for learners taking timed writing exams as well as for those who wish to write down their ideas about the topic before forgetting them" (Chenoweth & Hayes, 2001, pp.80 – 98). The development of writing fluency is under research in the area of foreign language learning. According to Chenoweth and Hayes (2001), writing fluency is especially important for second language learners' success in their studies. Investigating fluency, as well as accuracy and complexity, is a popular topic within second language acquisition studies. WF has some essential components of the foreign language acquisition of the EFL adult learners such as reflection, focus and relevance, sentence fluency, visualization and giving interpretations, in addition to mechanics. The researcher tackles these writing WF components as they represent the context through which learners' knowledge is reflected clearer. Moreover, writing precisely and concisely, avoiding vague or empty phrases; revising and editing text would help to improve the texts' coherence, and correctness. "Writing and increasing learner motivation and engagement toward writing is an important component in literacy, although it is not viewed as a current hot topic"(Cassidy, Montalvo-Valadez, Garrett & Barrera, 2010, pp 448 -456.).

Some writers described WF as "A work that expresses itself well, and has specific characteristics. Not only do such works include proper grammar, spelling, punctuation, and syntax rules, but their ideas are also organized in a rational and cohesive manner" (Lenski& Verbruggen, 2010). Lannin (2007) stated that some researchers defined WF as "cohesiveness and coherence of ideas in the writing, aided by syntactic structures that enable

a reader to easily move through the text” (p. 4). Moreover, Casanave (2004) stated in her book that WF is related to “writers' ability to produce a lot of language (or to read) without excessive hesitations, blocks, and interruptions” (p. 67). WF, in general from the researcher's perspective, is the learners' ability to reflect, deepen and organize the learners' thoughts, create flow of sentences, enhance coherence and cohesion of thoughts and ideas, and have them understood by another fluent or native speaker, regardless of major focus on mechanics.

"Written fluency is generally determined through analyzing the number of words in a written text, the text's length" (Skehan, 2009), or "the amount of time used for writing" (Chenowith & Hayes, 2001, p. 84; Skehan, 2009, p. 511). "Fluency has also been determined as the number of corrections the learner makes" (Knoch, 2007), although Abdel Latif (2012) argues that corrections may not be related to writing fluency. Alisaari and Heikkola (2014) have also previously shown that between a pretest and a posttest there was no difference in corrections measured as actual words and percentages. The research is based mainly on measuring the WF progress through visualization, interpretation, reflection, focus and relevance, sentence fluency, and mechanics through a created WF fluency rubric (**See appendix C**). In this study, it is assumed that applying VT, which works on expanding activities application; urging learners to find relationships between ideas, and recall prior knowledge; may have a major role on enhancing WF.

### **Context of the Problem**

Adult learners often do not have a pleasant experience in writing. During the prewriting stage, adult learners generally feel that they do not have the necessary information, thoughts, or ideas to reflect on paper or do not know how to organize their thoughts into a cohesive piece of writing. Rao (2007) points out that learners find English writing to be a difficult task because writing stages demand many cognitive and linguistic strategies about

which these learners are uncertain. In the Egyptian context, acquiring English is a difficult issue among EFL learners, especially Arab learners (Rabab`ah, 2005). It has been found that most language learners at all levels believe that writing is one of the most difficult language abilities to master (Abdel-Latif, 2007).

Amer (2003) expresses the problem of Egyptian learners in writing in more specific words: "While I was teaching Egyptian EFL students, I noticed that almost all the students were complaining of the same problem that is they do not know what to write in a given composition. Sentences like "I do not know from where to begin"; "words do not come when I need them"; "I do not know what to write"; "I always stay for hours without writing a word" were common among students" (p:29).

As an instructor of EFL, I experienced many learners who seek mastering the writing ability. I noticed that many of them lack thoughts, lack of sequenced ideas, and even basics of writing. This problem was also detected through some other instructors at the same field of teaching. There is an urgent need to enhance the learners writing.

Adult learners need to enhance their writing, especially their WF, and write fluently without hesitation. Writing is an active thinking process. Learners need to explore ideas, engage in reflective thought, and select and arrange language in a way that allows them to communicate effectively. "The ability to write quickly with few pauses and hesitations is important for learners taking timed writing exams as well as for those who wish to write their ideas about a topic before forgetting them."(Chenoweth & Hayes, 2001).

There is an urgent need to help learners express their thoughts easily in a written form. "Writing allows adult learners to both express themselves and display their knowledge in all content areas" (Lundstrom and Baker, 2009). Writing has an effective role in helping

adult learners to accomplish their tasks faster and communicate with various types of technology such as writing e-mails or letters. Furthermore, writing enhances adult learners' ability to express, organize, and reflect their thoughts in written work. The main concern of this study is not only enhancing the writing ability, but also the WF.

Despite various studies on fluency, little is known about the effects of different pedagogical methods on the development of WF. In this research, the researcher thought of applying several techniques that may help in enhancing the adult learners; WF. The effectiveness of VT on developing the adult learners' WF is tackled in the EFL teaching and learning context. Various pedagogical experts have identified that gap that currently exists between the thinking processes of adult learners, due to their greater exposure to visual media, and the language fluency that depends mainly on constructing and recalling previous thoughts. The implication is that writing instructors will need to reconsider expanding the minor scope of the curriculum beyond the teaching and illuminate faulty focus on explicit grammar. This would give adult learners the opportunity to reconsider how to utilize techniques of visual design in the creation and organization of their WF. The development of WF is supposed to be investigated in the area of second language acquisition.

The current study would allow adult learners to use visual media through adopting some VT activities to construct, organize their thoughts and enhance the learners' WF. Choo (4, March 2010) , in an article published by The National Council of Teachers of English, mentioned "The primary goal of such an approach is to provide creative spaces in the writing classroom that would empower adult learners to become not just writers but also composers of texts."

Natharius (2004) expands on the need for VT and proposes an axiom: "The more we know, the more we see" (p. 238). Finally, Barbatsis (2002) argues that as there are ideas and

meanings that words cannot express, it is necessary to develop a pictorial vocabulary in order to engage in semiotic communication. In this sense: Brains were not built to read. Reading is a recent invention of human culture. That is why many people have trouble with the process and why modern brain imaging studies show that the brain areas involved with reading move around a bit.

There are not many researches conducted on that unique field of study to be mentioned. Abigail Housen and her colleague Karin DeSantis (2001) have conducted researches over the past twenty years and affirmed the efficacy of using the VT curriculum. Teachers report that the majority of learners who participate in the VT curriculum learn to read more quickly, have greater comprehension abilities, and are more capable of expressing whole concepts and completing whole thoughts in a sentence (Curva & Associates, 2004; Longhenry, 2005). After completing the ten-week VT curriculum, learners' writing improves as well. Learners are more likely to write in complete sentences, which include more observations, to supply reasons to back up opinions, and to speculate among possible conclusions. Consequently, the VT curriculum is a valuable resource in aiding learners to improve their reading, writing, and communication abilities (Visual Thinking Strategies, n.d.).

According to some researchers, "WF implies the sense of fluent production the written text can reflect." (Argaman & Abu-Rabia, 2002, pp.143-160), and the speed of lexical retrieval while writing (Snellings & van Gelderen, 2004). Hester (2001) clarifies WF by viewing it as a concept encompassing features of composing rate, text quantity and quality, organizing ideas, and knowledge of writing conventions in the target language.

According to what is mentioned previously, fluency in writing is ensured when readers find flow of organized ideas, expansion of thoughts, reflection, visualization, smooth



reading, and when sentences are short and structurally accurate. In addition, reflection is thoughtful, carefully written, and demonstrates significant reflection. The text should include clear focused central idea, and demonstrate effective use of high quality, credible relevant sources to develop appropriate descriptive idea. Ideas and expansion of thoughts should be well organized and presented in a coherent manner to ensure fluency.

The study aims at enhancing WF based on the application of VT. Some of the expected features the adult learners may approach are:

- Being able to reflect their thoughts using sufficient structural and accurate vocabulary to participate effectively in most formal and informal written works, and professional topics.
- Enhancing focus and relevance abilities to have clear focused ideas and expressive details.
- Acquiring comprehension, which is quite complete for a normal rate of speech.
- Acquiring general vocabulary, through visualization and interpretation, which is broad enough, so that the learner rarely needs to look up for a word in a reference book.

This problem was affirmed by the pilot study conducted by the researcher as follows:

### **The Pilot Study**

The enhancement of WF should be under scope in the area of foreign language learning. The researcher conducted a pilot study using a writing test on a group of adult learners (n= 18) to assess their WF (**See appendix G**). The results proved that most of these learners lacked essential WF components; their mean score was 38%. It is noticed that there were some deficiencies in their writings as follows:

- Words are imprecise. Connections are unclear. Syntax is slippery. Words do not have clear meanings.
- unexplained thoughts
- vague nouns and adjectives
- Overuse of auxiliary verbs leading to imprecise verbs, and passive voice.
- Non-linear language that reflects enormous effort to express thought as clustered rather than linear.
- No cohesive thoughts to compose a coherent written product.

Based on the results of the previous pilot study, it is noticed that adult learners lack essential WF components. This may be due to the deficiency of some of the educational systems, which support language-centered curriculum. On the contrary, more recent generations of learners have been raised with greater exposure to visual stimuli, through television, computers and mobile devices, which should be put into consideration. Instructors should broaden the adult learners' focus. Instead of depending mainly on the usage of grammar and inconsequential thoughts. They should shift to meta-concepts related to developing writing composition through deepening thinking on previewed visual media. Henceforth, the need for the current study, which adopts VT to develop adult learners' WF, was felt.

### **Statement of the Problem**

Adult EFL learners often have some difficulties in writing, which is reflected on their WF. This study is an attempt to find a solution for this problem through adopting VT. Writing can be seen as a difficult task for adult learners. Learners would experience a great deal of difficulty within their academic career. They need to have a good command of writing that helps them accomplish their demanded work. Using VT can enhance the learners' WF.

## **Research Questions**

In order to tackle this problem, the current study attempted to answer the following main question:

"How can visual thinking develop EFL adult learners' writing fluency in Telecom Egypt Training Institute (TETI)?"

In attempting to answer the above question, the following sub-questions were also answered:

- 1- What is the current writing fluency level of Telecom Egypt Training Institute's adult learners?
- 2- What are the writing fluency components that these learners should have?
- 3- What are the activities and components of a suggested program based on VT that can be used to develop the writing fluency for the targeted learners?
- 4- What is the effect of the application of a program based on visual thinking on the targeted learners?

## **Hypotheses of the Study**

The study verified the following hypotheses:

- There is a statistically significant difference at the significance level of 0.05 between the mean scores of the study participants on the pre and post WF test administrations with regard to the development of their "overall WF" favoring the posttest scores.

- There is a statistically significant difference at the significance level of 0.05 between the mean scores of the study participants on the pre and post WF test administrations with regard to the development of their "reflection" favoring the posttest scores.
- There is a statistically significant difference at the significance level of 0.05 between the mean scores of the study participants on the pre and post WF test administrations with regard to the development of their "sentence fluency" favoring the post test scores.
- There is a statistically significant difference at the significance level of 0.05 between the mean scores of the study participants on the pre and post WF test administrations with regard to the development of their "visualizing and giving interpretation" favoring the posttest scores.
- There is a statistically significant difference at the significance level of 0.05 between the mean scores of the study participants on the pre and post WF test administrations with regard to the development of their "focus and relevance" favoring the post test scores.
- There is a statistically significant difference at the significance level of 0.05 between the mean scores of the study participants on the pre and post WF test administrations with regard to the development of their "mechanics" favoring the posttest scores.

### **Delimitations of the Study**

This study was delimited to:

- Only writing fluency, as it is the context through which learners would be assessed.

- A group of adult English learners (n=14), having a training course in TETI.
- Some VT techniques, such as posing questions, visualizing, interpreting, connecting with prior knowledge, and decoding.

### **Significance of the Study**

This study is expected to be of importance to:

**The English adult learners.** The instructor could enhance the adult learners' WF by adopting various VT activities, developing their critical thinking skills, grasping the ability to interpret and infer, recalling the prior knowledge, and linking it with the new learnt knowledge. To assist adult learners in achieving academic success within written work , they should be provided with abundant opportunities to develop their WF.

**EFL instructors.** They will be provided with a variety of suggestions and activities that they can effectively implement to increase and develop their adult learners' WF.

**Curriculum developers and designers.** The researcher hopes to embed the VT processes in educational curricula that would help in improving WF and the development of new ways of teaching writing.

### **Definition of Terms**

**Writing fluency.** WF is defined as writing with accuracy and speed (Johnson & Street, 2013). In this study, WF is considered the learners' ability to write with a natural flow and rhythm to reflect WF components. Some of the WF components are reflection, focus and relevance, sentence fluency, visualization and interpretation, and mechanics. WF research is important to researchers and teachers interested in facilitating students' written text production and in assessing writing.

**Visual thinking.** Roam (2008) defines VT as a cycle of observation, discovery, imagination, and demonstration, making the VT has close relation to learning effect. In this study, VT is a teaching trend that improves critical thinking and language skills through discussions of visual images. VT is proposed not narrowly considered an approach or a strategy, as mostly tackled in some researches; but an analytical tool, an instructional scaffold, and a new teaching trend which includes various dimensions of visualization, interpretation, interaction, connection with prior knowledge, and decoding.

VT encourages participation and self-confidence, especially among learners who struggle to build strong content knowledge; comprehend as well as critique, value evidence, and come to understand other perspectives and cultures. VT is a way to organize your thoughts and improve your ability to think, interpret, debate, inference, argue the evidence, arouse group discussion, and observation. In addition, it is a great way to convey complex or potentially confusing information.

VT is somehow related to concepts like non-linear thinking and holistic thinking, and it is most probably seen in contrast with written text, which is mainly linear; the same exactly like our stream of consciousness, generating ideas and endless linear stream. VT may help learners learn to write fluently, and may enhance their visual and spatial development while assisting them in describing imagery in words. It is appropriate, therefore, to turn to theories that explain the mental processes involved in visual and spatial cognition that provide a theoretical model for understanding how visual media is transformed into writing.

The remainder of this thesis will be organized as follows:

**Chapter Two:** Review of Literature and studies related to the current study's variable.

**Chapter Three:** Method.

**Chapter Four:** Data Analysis, Findings and Discussion.

**Chapter Five:** Summary, Conclusion, and Recommendations.

## **Chapter Two**

### **Review of Literature and Related Studies**

This chapter presents a theoretical background of the current study based on a review of literature and related studies. Visual thinking, writing fluency, the relationship between visual thinking and writing fluency, and how WF can be developed are the main dimensions of this chapter.

#### **Visual Thinking**

“Visualization is the ability, the process and the product of creation, interpretation, use of and reflection upon pictures, images, diagrams, in our minds, on paper or with technological tools, with the purpose of depicting and communicating information, thinking about and developing previously unknown ideas and advancing understandings.” (Arcavi 2003, p. 217) Visualization is an action or the result of the action during which the phenomena or objects are visualized in some arbitrary signs and comprehensible forms. The right mental models are formatting because of visualization (Bilbokaitė, 2007). On the higher end of this wide spectrum of processes and thinking levels, we find visual reasoning, which can be defined as using pictures, images or diagrams effectively for solving tasks of higher-order thinking.

Visualization has been recognized as one of the most effective contexts for accelerating human thinking and learning. Over the last two decades, the use of visual displays has increased dramatically. Newspapers, journals, TV-broadcasts, and pamphlets contain considerably more illustrations, graphics, and diagrams than they did a few decades ago. Visual displays are also used far more frequently in teaching, learning and in cooperative problem solving.



Adult learners need to make and revise visual items and use their own perspectives of the world to clarify and gain meaning from previewed visual media. "Competent writers need to investigate between the lines, moving beyond the obvious, but still staying focused on the text" (Mantione & Smead, 2003, pp125-136). Using VT does not depend only on videos or images but also on visual media, which embeds texts, to deepen the learners' visual thinking.

Cognition is the unique phenomenon that has brought the development in a particular direction influenced by the surrounding environment. Thinking is a cognitive process in response to the learning environment. It is a complex phenomenon that draws the relevant database. Thinking is defined as a set of mental abilities based on various factors like knowledge, judgment, reasoning evaluation and visuals generated from the environmental behavior (Zangwill, 2004). Thinking is further categorized as critical, analytical, higher order thinking, lateral to vertical thinking, positive or negative thinking, conscious or unconscious, creative thinking or linguistic thinking, and VT which the last is our main concern.

VT is referred to by Abigail Housen; a cognitive psychologist in the Harvard Graduate School of Education as a teaching method, which has been used to improve observational abilities and critical thinking, as well as improve communication efficiency" (Housen, 2001 pp.1-26, Housen & Yenawine, 2002, pp 172-189). VT is a visual aspect of critical thinking, cognitive load theory, complex learning, constructivism, metacognition, and scaffolding. VT targets at making decisions based on their observations, developing creativity and thinking abilities. VT offers a set of contemplative practices that reveal the central importance of multiple perspectives to understanding complex issues, which is the first step towards innovation; successful problem solving, and effective collaboration. In order to understand a previewed visual media, a learner shall see, think, decode, and interpret. Roam,

(2008) suggests that the real value of VT is to make complex issues understandable by making them visible, not simpler.

VT is an inquiry-based teaching method used by museums and schools to teach visual literacy, thinking, and communication abilities (Yenawine, 2013). In the current study, VT is not considered just a strategy, but an analytical tool, an instructional scaffold, and a new teaching trend. It includes various dimensions of visualization, interpretation, interaction, connection with prior knowledge, and decoding.

VT is based on observation, critical analysis, and sharing of ideas to develop higher-level thinking abilities. It was adapted to be used in the learning process. In VT, the teacher is a facilitator rather than a lecturer, and the learner is an active participant in the learning process. Using VT, learners demonstrate independence, build strong content knowledge, comprehend as well as critique, value evidence, and come to understand other perspectives and cultures (Common Core State Standards Initiative, 2010).

Various researches have demonstrated the positive impact that VT has on learning. Abigail Housen (2001) developed rigorous research methods based on her work with VT over several decades, and informed by her studies over a wide range of settings and with diverse populations on developing their critical thinking abilities.

Another research has been conducted on various learners' populations. Studies have revealed that VT was effective for improving writing (Franco & Unrath, 2014; Moeller, Cutler, Fiedler, & Weier, 2013), critical thinking (Landorf, 2006; Moeller et al., 2013, Yenawine & Miller, 2014), and encouraging risk taking (Franco & Unrath, 2014; Landorf, 2006).

Research by child development theorist Linda Silverman (2005), suggests that less than 30% of the population strongly uses visual/spatial thinking, 45% uses both visual/spatial thinking and verbal thinking, and 25% thinks exclusively in words.

Harvard University art professor Rudolph Arnheim (2012), coined the phrase "visual thinking" explaining how the development of imagery can allow us to make connections and apply pictures in our mind's eye to the world around us, helping us communicate more effectively. He wrote, "The clarification of visual forms and their organization in integrated patterns as well as the attribution of such forms to suitable objects is one of the most effective training grounds of the young mind (pp.18-45).

These studies that compared different levels of learner engagement during visualization, as an aspect of VT, were much more likely to find a difference in learning outcomes in favor of the visualization tool. Through applying visualization, learners are urged to visualize, interpret, interact, connect with prior knowledge, and analyze. This work led to the development of Engagement Taxonomy (ET), which describes different forms of engagement (Naps & Grissom, 2002). It rests to the idea that higher engagement between a learner and VT results in better learning outcomes. Based on the studies analyzed by Hundhausen, (2002) and Naps et al. (2002) and more recent studies (e.g., Naps and Grissom, 2002, Grissom, McNally, & Naps, 2003, Urquiza-Fuentes and Vel´azquez-Iturbide, 2007), it seems to be a consensus that the engagement that VT promotes is a reliable indicator of its educational effectiveness.

Recent research by Harvard scientists, Peter Reuell (2018), suggests that even when we try to think in words, imagery is still visualized into our minds. "For a long time, we understood our world visually, so maybe language is an add-on" (pp.219-225).

In addition to the prominent effect of using VT, there are several reasons for using VT curriculum to support the goals of the Common Core State Standards (CCSS; National Governors Association Center for Best Practices [NGA Center] & Council of Chief State School Officers [CCSSO]. The Standards require students to be able to “analyze and create a high volume and extensive range of print and nonprint texts in media forms” (p. 4).

Many educators have used VT as a precursor to working on a literary passage because the thinking abilities are used to analyze artwork, and can be transferred to the educational learning process as well. VT uses a process of asking series of carefully worded questions about a previewed visual media, during group discussion, in an attempt to foster thinking abilities. The VT discovery process requires adult learners to look at visual media, and to answer series of questions. Some of these questions are "What's going on in this picture?" "What do you see that makes you say that?" and "What more can you find?" The purpose of these questions is to construct meaning and understand from the visual media (Housen&Yenawine, 2001). The answers of these questions can have positive effect on the learners' WF.

The instructor paraphrases each response, which fosters stronger thinking and allows for vocabulary development, grammar reinforcement, and expansion of communication abilities, or just WF as an equivalent term. Adult learners are required to think deeply, learn from others' perceptions and link new information to their prior knowledge. Building on visual capacities, Hailey (2014), and Yenawine and Miller (2014) supported the use of VT across disciplines. VT is useful across disciplines because “VT does not teach what to think, but rather supports the discoveries learners make when they are given opportunities to think in various ways” (Yenawine & Miller, 2014, p. 3). VT is flexible enough to support a range of disciplines with little adaptation. For example, Hailey suggested adding a fourth question

to facilitate learners' ability to make connections to the content area. Therefore, adult learners can be asked series of various questions to deepen the learners' thinking and as a result, to expand their thoughts, reflection, visualization and interpretation, and accordingly, to enhance the learners' WF.

VT trains adult learners to observe closely, to inquire, and to think more deeply about what is obvious and what is ambiguous. These critical thinking activities are readily transferable. VT helps adult learners to interpret, detect patterns, communicate using visual media, in addition to using visualization tools; adult learners make their thinking visible in all career areas.

Pettifer et al. (2000) considered that VT is a creative process that can facilitate the construction of a mental model, and enhance the expression, communication, and creativity. Landorf (2006) argued that effective VT is the result from the interaction between seeing, imaging, and drawing in design learning, while Roam (2008) asserted that VT is a cycle of observation, discovery, imagination, and demonstration, making the visual thinking have close relation to learning effect.

Bottrell (2011) states that visuals enrich the learning situation. They stimulate learners to write. Hu and Commeyras (2008) add that learners enjoy pictures in EFL sessions, as they do not need to translate the written word. Finally, VT is a narrative teaching strategy that helps learners integrate thinking and communication abilities to improve their writing (Housen, 2002). Harmer (2001) highlights the relation between writing and thinking: Thoughts are expressed through writing and the quality of writing depends on the clarity of thoughts. Activating learners' thinking facilitates the acquisition of EFL. AlNaqbi (2011) concludes that writing is the outcome of thinking.

VT facilitates the ability to recognize, understand and appreciate the meaning and purposes of visual culture. This statement is made manifest when learners learn to "decode" forms of visual media by seeing and studying various chunks of words presented by a trained and knowledgeable instructor. A hypothesis adopted by Jennifer Eiserman (2009) that decoding of visual media will increase learners' VT through reading, writing, looking, creating and reflecting. As learners are engaged with different symbol systems, they will grow in literacy.

VT empowers learners to think critically about visual media and make decisions based on their observations about each work of art. VT is a new teaching strategy that improves critical thinking, visualization, interpretation, interaction, connection with prior knowledge, decoding, in addition to language abilities through discussions of displayed visual media. VT encourages participation and self-confidence, especially among learners with writing difficulties. Therefore, VT offers an effective strategy for educators to meet current learning needs.

### **Visual Thinking Components**

Learners now engage with millions of moving and still images as they navigate their out-of-school lives. Research has estimated that learners' screen time has doubled since 1999 (Wartella, Rideout, Lauricella, & Connell, 2015), supporting the shift from purely printed text to multimodal text, which combines words with visuals and sound. It is also noted that learners' exposure to such explicit media does not imply that they know how to critically analyze and navigate all types of media that they may encounter. VT components are various, but some of them are selected such as posing questions, visualizing, interpreting, connecting with prior knowledge, and decoding. Instructors should support learners to enhance their visual thinking. Indeed, it may have an effect on enhancing their WF.

VT enables learners to categorize information into patterns. Thus, information can be remembered easier (Wootton& Horne, 2010). Learners analyze the visual text to support their learning. They describe visual media and interact with others to check their understanding. Yenawine (2003) explained that there are degrees of VT. A young person may construct meaning from images, but an adult has more experiences, and better thinking abilities, which lead to better reflection; visualization, and interpretation. To increase the capacity for thinking, learners need both time and exposure, as well as educational interventions. The basics of VT use art to teach thinking, communication abilities, and visual literacy to young people (Housen & Yenawine, 2000). Growth is stimulated by looking at visual media of increasing complexity, responding to developmentally based questions, and participating in group discussions that are facilitated by teachers. During VT lessons, all learners have an opportunity to point out what they see in the previewed visual media, express their opinions about it, and provide evidence to explain their interpretive comments.

Posing questions is one of the main components of VT. Learners have to answer three main questions: What is going on in this picture? What do you see that makes you say that? What further is there to see? (Cappello& Lafferty, 2015). These questions are described as follows:

- What is going on in this picture? This question opens the discussion. It suggests that the image is “about” something. It encourages finding of stories or activity and allows comments addressing colors, feelings, information, personal associations, etc. Learners are asked to think and speak for themselves.
- What do you see that makes you say that? This question asks learners to gather more evidence to support their opinions. The instructor gives no indication that he was judging whether the respondent was right or wrong in his interpretation. This

question required the learner to look more closely and pay close attention to details. The learner is asked to provide evidence to back up his answer to the first question and relate that evidence back to his first answer. The learner has to revise and edit his response, noting any new observations. These points are grounded in concrete visual data.

- What further can you find? Which requires learners to dig deeper and look closer for more details. Looking again helps learners reconstruct their thinking after considering other participants' responses, and modify their thoughts. This method of inquiry is a way that helps learners get engaged in problem solving that can develop a deeper, more thorough way to analyze and consider thoughts. This method allows the respondent to think aloud with the group, to look for more details, to consider more options, and to participate more. As learners attempt to construct meaning, it was noted that they were more active with VT and seemed to develop a more meaningful way of learning instead of passively receiving information (Housen, 2001). Housen also found that learners had the opportunity of hearing how other learners built meaning, which accelerated their own thought processes and exposed them to other ways of thinking (Housen, 2001; Landorf, 2006). This question has the effect of making the conversation more comprehensive, which would be invested to enhance the learners' writing fluency. Details that may have been missed can be found when learners are asked to look for more.

By asking some of the VT questions, learners are able to identify facts and main ideas in visual media and use them as the basis for interpretation. Learners become more focused when observing pictures, and therefore they can find more details and tackle various questions about the previewed visual media. Learners are



also able to identify, analyze, and apply knowledge of theme and provide evidence from the visual media to support their understanding. Teachers commented that learners' analyses were more detailed than in the past and that learners were able to adjust and confirm their thinking. One teacher explained that when she was introducing a new book to the learners, she asked them what they could say about the cover of the book. The learners immediately began a conversation about what was happening, including predictions and inferences without prompting from the teacher. Learners were able to deduce themes, through the use of visual details, and to back up their ideas through evidence in the pictures (VUE, 2003). Further types of questions could be created and used to stimulate the learners' VT, which can lead to enhancing their WF such as:

- Identification Questions
- Planning Questions
- Clarification Questions
- Association Questions
- Simplification Questions

Another VT component is Interpretation. Interpreting through visual media, requires practice and time. Receiving visual interpretations depends on visual sharpness; conveying them depends on the passage, and they only become relevant regarding the visual narration ability of the learner. In order to interpret and decode the visuals; observing, critical thinking, and prior knowledge shall be developed. In visual media interpretation, transfer between displayed visual media understanding and self-understanding can occur in various ways according to each learner's prior experiences. Advanced VT abilities require critical thinking, and advanced learners can decode the content conveyed through visuals.

The ability of interpreting and regenerating visual messages is a result of deepening VT. VT on the other hand, is the system of thinking by reasoning through visuals. In order to acquire VT abilities, a person shall gain basic visual competencies.

VT and prior knowledge are two essential keys that connect together to support the learning process. The State of Queensland's Department of Education (2002) refers to high connection and low connection learning. High connection learning gives learners the opportunity to link their prior knowledge to the topics, and competencies addressed in the classroom. By contrast, low connection learning introduces new information without any direct or explicit exploration of students' background knowledge. High connection is supported to remove barriers in order to expand learners' outcomes or in other words their WF.

The constructed meaning of VT processes shows that all the components of VT are closely interconnected. VT helps to perceive, decode and imagine visual information, to build the mental models with the help of memory. The acquired information is grasped, so that it could stay in long-term memory. We could elicit from the previous illustrations that questioning, visualizing, interpreting, investigating, connecting with prior knowledge, decoding, observing, describing, comparing and contrasting, finding complexity, expanding viewpoint, and reasoning are some essential elements and main components of VT.

### **Stages of Visual Thinking**

Housen (2007) referred to cognitive development as a process involving time and exposure. She explained that VT curriculum is designed to promote development through five sequenced stages as follows:

#### **I. Accountive Stage**

Viewers are observers, who use concrete observations and personal associations to create a narrative about the previewed visual media. Viewers' strengths can be characterized as storytelling. Students see things through their own life experiences. In VT, learners should be asked to look at an image and think about what they see, then look again, and share and compare their thinking with others. This capacity leads to movement to the next stage.

## II. Constructive Stage

Viewers set about building a framework for looking at visual media, using the most logical and accessible tools: their own perceptions, knowledge and values, in addition to comparing and contrasting and constructing what they see to make meaningful and thoughtful written text. Emotional responses tend to disappear as viewers distance themselves from the work of art.

## III. Classifying Stage

Viewers adopt the analytical and critical stance of the visual media. They identify the work in terms of place, time, school, style and origin. They decode and criticize the work using facts and figures, categorize the work, and thereby explain and rationalize the work's meaning. All the outcomes are directed to enrich their WF.

## IV. Interpretive Stage

Viewers seek a personal encounter with the visual media. They explore the canvas, letting meanings slowly unfold and appreciating subtleties of line, shape and color. Feelings take precedence over critical abilities as viewers allow the meanings and symbols of the work to emerge. Each new encounter with the work of art allows for new insights and experiences, and viewers recognize that its identity and value are subject to reinterpretation; hence, their own interpretations are subject to change.

## V. Re-Creative Stage

In the re-creative stage, the researcher integrates the acquired information and invests it on enhancing the learners' WF.

Although stages occur sequentially, all stages are equally important and cannot be skipped. Each stage represents a milestone level of accumulated VT abilities as an attempt to enhance the adult learners' WF.

### **The role of instructors in visual thinking**

VT places instructors in the role of facilitators. The instructor poses the following three main questions: (a) What is going on in this picture? (b) What do you see that makes you say that? And (c) What further can you find? These questions are posed to stimulate dialogue. These are main questions to be stated firstly, and the instructor has the authority to expand the posed questions to get more clarifications of the previewed visual media.

VT needs a trained facilitator, more than an instructor, to engage learners with previewed visual media. Learning is conducted to seek an interpretation of what each learner perceived as happening in the previewed visual media. VT is a spatial, pictorial, and right brain thinking. It depends on the information processing of visuals, such as pictures, videos, simulations, and posters (Mange, Adane, & Nafde, 2015). During the learning process, learners are encouraged to provide verbal, detailed visual evidence as validation for what they claimed to observe. Students who experienced VT felt their ability to see and think was enhanced by looking at art and being asked to give visual evidence for what they saw (Naghshineh et al., 2008). The discussion, of previewed visual media, allows learners to consider each other's mutual interpretations. Meanwhile, the facilitator or the instructor paraphrases back their observations and deepens thinking over the previewed visual media.

The instructor guides learners to discuss each other's comments, to build a rich discussion about visual media. At the end of the conversation, a discussion about how the facilitator structured the conversation ensued as learners practiced active listening, seeing, reflecting, interacting, speaking, and writing. This teaching strategy holds potential in WF for learners to explore their thought processes and consider more interpretations of a given media.

Responding to learners' comments, the instructor listens carefully to learners, and makes sure that he understood what they visualized accurately. The instructor should be precise, even when it is a comment that has been repeated. The instructor uses encouraging body language and facial expressions to nurture participation. Then, the instructor paraphrases each comment, changes the wording, but not the meaning of what is being said. In rephrasing, the instructor demonstrates the use of proper sentence construction and rich vocabulary to assist learners with language, accepts each comment neutrally, and remembers that this process emphasizes a useful pattern of thinking, not right answers. The facilitator should use the questioning and facilitation strategies to ensure learners are engaged in visual thinking. Brainstorming is an essential element, and incorrect answers should not be immediately pointed out. In addition, learner should be urged to justify their answer, work through their logic, and make suggestions to other ideas or concepts they should consider. The role of instructors is summarized in the following points:

- Paraphrasing learners' responses, actively listening, validating individual views, demonstrating language use, reinforcing a range of ideas
- Facilitating learner discussions, encouraging scaffolding of observations and interpretations.

- Supporting learners opinions with evidence, listen and share information and ideas, to construct meanings together.
- Helping learners to brainstorm their ideas and interact with other ideas.
- Helping learners to wrap up discussions.

### **The role of learners in visual thinking**

Learners are learning to make detailed observations, sorting out and applying what they know. Articulating their thoughts leads to growth even when they make mistakes. Then relative answers are connected, showing how the learners' thinking evolves, how some observations and ideas stimulate others, and how opinions change and are built. Finally, learners are encouraged to think of viewing every type of visual media as an ongoing, and open-ended process. (VUE staff, 2001)

Learners have an essential role to offer concrete evidence from the visual media or text to make inferences about their meaning and to justify their claims. The interaction furthermore reveals the critical and constructive evaluation of a divergent viewpoint. Advanced responses are noticed via discussions done during lectures. The learners are urged to critically analyze, reflect upon, and respond to numerous communication situations. When the sequenced images represent various perspectives, experiences, historical periods, and cultures—the kind of variety recognized to stimulate cognitive growth (VUE Staff, 2001)

All learners were encouraged to participate and equal attention was given to them; as learners listened to each other, they considered all answers as a possible interpretation. Each learner's comment was acknowledged and facilitators continually pointed at the painting to keep the group focus on the artwork. Learners often scaffold off of each other's comments, and the facilitator reflected back each time a learner responded in order to make sure she

understood what the learner intended (Reilly, Ring, & Duke, 2005). This line of questioning provided learners the opportunity to agree or further explain how they arrived at their interpretation and validated the content of what was said.

### **Perceptions of visual thinking**

The dominance of the idea that eyesight is more effective in perceptual process than any other senses is prominent. The concepts of perception and visual perception come into prominence in our world where every social process is captured by visually and everything is visualized. Eyesight, one of human beings' senses, is more significant when compared with other senses, as it enables human beings to react after the struggle of describing and interpreting things surrounding them with sight primarily (Ketenci&Bilgili, 2006). Human brain uses mind images of visual perception for daily life, in other words, it can think visually. (Deary, Johnson & Houlihan, 2009). Recognition and variation are two essential keys of visual thinking perceptions.

Perception processes its actions for some time. Perception performs its functions during certain moment dependently on difficulty of an object, information, content, time etc. Each function of perception is adapted to organism work and flow of information.

Perception can compare details and features of an object. The human notices the brightest, the strangest and the biggest object. This way, learners perceive the dimensions and colors, which are close to their perception. It is possible that motivation and personal features act in this situation. Learner who seeks to satisfy his cognitive needs is being activated by environment and perceives the details attaching the most significance.

Variation means that perception goes from one perceiving part to another. If the object creates several meanings, perception "jumps" from one meaning to another. Jones R.

(2003) notices that when we look at ambiguous figures our perception spontaneously varies from one perception to another. It has to be emphasized that the objects of scientific visualization distinguish for data visualization having one meaning, thus, it is likely that perception varies between size of the object, location in space, and color etc.

The most effective perceptive thinking education will be enhanced through art education. By this type of art education, current forms and techniques are taught and improved. A person received art education is familiar to visual complexity and to think on problems visually (Arnheim, 2012). With art education, learners encounter an education process for the first time, including behavioral changes such as, recognizing the environment, perception, interpretation, sighting, symbolizing, and re-correcting (Pauwels, 2007). Instead of dealing with art education.

### **Visual Thinking as a Psychological Phenomena**

Some psychologists relate different modes of thinking to different hemisphere of the brain, the metaphorical left and right brains where the right is home to the visual, spatial, analogical, and parallel processing capacities, while the right is verbal, linear, sequential and logical (Aitchison, J. 2012). The location of the different modes of thought is not as important as the distinction between intuitive thought processes, and logical thought processes. For learning, integration of the two modes of processing would seem the best approach; appealing to the right brain to make global linkages and to the left-brain to build logical relationships.

Collected Information is stored in the human brain, which perceives its environment and stores the information and knowledge in place cells. Based on the representation of the stored information in the brain, it creates cognitive maps, and humans act on the environment by using these maps. Hence, there are various cognitive maps in the brain, and cognitive map



management aims to find shortest path between the source and the target destination based on decision-making theory. Providing learners with multiple ways to learn content has been shown to improve learners' learning (Hattie, 2011). Visual information supports human thought processes and maintains long-term memory.

Some Brain research confirms that both sides of the brain are involved in nearly every human activity, we do know that the left side of the brain is the base of language and works in a logical and systematic order. The right side is more visual and processes intuitively, holistically, and randomly (Yovel, Levy & Yovel, (2001).

In (2001), Mayer clarifies some strategies for expanding the memory for acquiring by using instructional visual media and explains how visual and verbal memories can interact. Mayer builds his theory based on Atkinson and Shiffrin's information processing theory. Furthermore, Mayer identifies three cognitive processes of selection, organization and integration to increase recalling information and enhance learning process. While the information learning theory focuses on the structure of these same three principles to enhance the information processing and storage in the memory. In addition, Mayer's cognitive multimedia theory focuses on the facilitation of these principles in retaining the information in which it can be utilized in a meaningful way. Mayer's theory emphasizes that the recalling and retention of information starts at the organization stage in which significant information needs to be organized and visualized in order to be moved from the short-term memory to the long-term memory where it can be stored.

Lohr (2008) offers an interpretation to Mayer's organization principle of the multimedia theory. She states, for the instructional designers, that: "learners are more likely to think about your visuals the way you want them to if you organize or present information, in a way that the mind is predisposed to grasp."(Lohr, p.62).

Ears, eyes, and all human senses process visual media. They are not only processed by decoding the media superficially, but by embedding all senses to figure out the sounds, images, tastes, colors, and every slight detail and make massive use of it through retrieving and linking it with prior knowledge the learner has.

### **Visual Thinking and Language Learning**

Abigail Housen and her colleague Karin DeSantis (2001) have conducted a research over the past 20 years throughout the United States and Eastern Europe. They have affirmed the efficacy of using the VT curriculum. Teachers report that the majority of learners who participate in the VT curriculum learn to read more quickly, have greater comprehension skills, and are more capable of expressing whole concepts and completing whole thoughts in a sentence (Curva& Associates, 2004; Longhenry, 2005).

After completing the ten-week VT curriculum in the conducted research by Housen, learners' writing improved as well. Learners are more likely to write in complete sentences, which include more observations; to supply reasons to back up opinions, and to speculate among possible conclusions. Consequently, the VT curriculum is a valuable resource in aiding learners to improve their reading, writing, and communication abilities (Visual Thinking Strategies, n.d.).

Teaching written texts, in order to make interpretation of relevant visuals regular activity, various activities shall be performed. For that purpose, learners may be asked to depict relevant visuals (picture, painting, photograph, text, etc.). The aim of this process is to get learners acquire familiarity for reading by depicting various kinds of visuals. Learners, interpreting images by the help of the teacher at first, shall be able to interpret them on their own in the forthcoming processes.

In VT, learners are asked to provide chunk of words to describe a visual media (main idea) and an explanation of what is in the media to support it (details). Questioning is the act of asking, probing, and wondering. By asking questions, writer pursues the unknowns of their story (Mantione & Smead, 2003). Research has shown that in order for learners to comprehend text, questions need to leave room for learners to struggle with meaning, rather than just point to answers (McKeown & Beck, 2001). In VT, group discussions have a purpose of building meaning from a visual art print, and learners' thinking is clarified through questioning.

Learners shall be engaged to the given activities in which they can generate their own visual responses. For instance, they may be asked to discuss in pairs and to imagine that they are visual editors for a book; what kinds of visual instruments they would use to elaborate elusive texts. At this point, learners are requested to read an elusive text and asked to discuss in pairs, and reply the question of 'Which visuals may be used to make this text more understandable?' Each of the proposed visual materials is hanged on the board. Then, all of the groups come together and examine other groups' material and they all decide which one of these materials is the best. Each learner can put this image on the relevant page of the book. Learners shall be encouraged to regenerate the images they examined. Learners may be asked to reflect the main ideas of a paragraph or a text with storyline. The aim of this process is to get learners acquire a habit in generating cognitive images while reading.

It is proposed that learning through the application of VT activities may help learners deepen their thinking, acquire the English language, and achieve academic success. In addition, VT is a learning technique in which a learner understands better and saves the information when the thoughts, words and concepts are correlated with visual media. The learner perceives how to classify and organize the knowledge. VT helps learners in analyzing

and organizing the knowledge. Technology has an essential role on enhancing the VT and as an outcome the learning process in general. In classrooms, the technology can, when used appropriately, be used to promote higher order thinking outcomes (Oliver & McLoughlin, 2001). As a helping tool, learners can use graphic organizers as they fill in and build upon a visual map or diagram. Graphic organizers are some of the most effective visual learning strategies for learners and are applied across the curriculum to enhance learning and understanding of subject matter content. In a variety of formats dependent upon the task, graphic organizers facilitate learners' learning by helping them identify areas of focus within a broad topic, such as a novel or article. Because they help the learner make connections and structure thinking, learners often turn to graphic organizers for writing projects.

### **Writing Fluency**

Writing is the act of communicating what we hear, think, plan, see, and live through writing (Sever, 2004, p. 24), on the one hand, and the description of feelings, ideas, desires, and events with a certain number of symbols in accordance with certain rules (Özbay, 2007, p. 115). Writing does not mean simply compiling words or sentences on top of each other spontaneously. Writing is to reflect, and express one's feelings, wishes, opinions, and ideas in a certain order, discipline, and harmony (Avcı, 2006, p. 32). Based on the previously mentioned quotes, the learners should make use of visual items through organizing and expanding their thoughts, sharing ideas, linking them with their prior knowledge. "It is hypothesized that providing learners with a chance to plan for their production before performing the main tasks decreases the cognitive burden during the processing of language production and allows them to focus on various aspects of language to recover information in working memory, in order to achieve a more successful task performance" (Ellis& Barkhuizen, 2005).

"Writing is critical to overall literacy development" (Biancarosa & Snow, 2006). "Writing provides learners with the means to communicate what they know" (Graham & Herbert, 2010). "It is important for integrating knowledge and thinking critically" (Shanahan & Shanahan, 2008). Too few learners develop proficient writing. This widespread lack of writing proficiency is problematic given that a majority of jobs require employees to write proficiently at work (National Commission on Writing in America's Schools and Colleges, 2004).

One possibility for studying fluency is not to treat it as a solid construct, but rather to examine it from a componential viewpoint, as comprising different dimensions of performance. Fluency is an essential component within the overall concept of communicative competence, although definitions do not always include it as a separate factor (Fraser, 2010). Although a 'multi-dimensional construct' (Pallotti, 2009, p. 591), fluency is frequently defined in 'the production of language in real time without undue pausing or hesitation' (Ellis & Barkhuizen, 2005, p. 139).

The word fluent is defined as having the characteristic of being fluid, easily understood, readable, clear in terms of meaning, and being cohesive. Fluency is defined as being fluent, the characteristic of a word, writing, and expression's being fluent in the Turkish Dictionary (2005). The word fluent is defined as "having the ability of being fluid, easily understood, readable, clear in terms of meaning, and being cohesive. "Fluency is defined as being fluent, and get the learners to do easy tasks at faster-than-usual speeds" (Nation & Newton, 2009, pp. 38-64).

Fluency has often been studied within the framework of CAF (complexity, accuracy, and fluency; see Housen & Kuiken, 2009), and most researchers base their operationalization on Skehan's (2003) model of repairs, breakdowns (pauses), and speed. Pausing and speed

have revealed the most robust results and are considered to be good markers of (dis)fluency (Bosker, Pinget, Quené, Sanders & De Jong, 2013; Freed, 2000; Kahng, 2014). De Jong, Groenhout, Schoonen, and Hulstijn (2015) showed that it is not necessarily the length of pauses but the amount of them (both filled and silent) that is most reliably related to proficiency.

Many researches admit the importance of WF, yet there is far less researches who know how to engage learners in developing their WF. Cassidy and Cassidy (2010) outlined the importance of high-quality writing instruction and discussed numerous strategies to assist in providing this instruction to the learners. Writing and increasing learner motivation and engagement toward writing are important to enhance their writing fluency (Cassidy, et al, 2010).

The connection between fluency and the productive ability of writing, both the product and the process, has been widely documented (Abdel Latif, 2012). Fluency integrates factors of ease or effort needed by the reader to decode and process the message s/he reads. Thus, speed, hesitation phenomena, incomprehensibility of content, range of vocabulary and expressions employed, and a comprehensible level of accuracy in production on grammatical, and orthographical levels are all involved.

WF has always been one of the difficult writing abilities faced by low and average proficiency learners. It requires learners to be able to write smoothly as ideas flow through their mind. Even though low and average proficiency learners are recommended to write freely without worrying about spelling and grammar, they still find it hard to pen their thoughts and feelings due to the lack of vocabulary knowledge, writing practice and reading. Van Gelderen and Oostdam (2002) also support this perspective, stating that one of the

fundamental characteristics of fluent writing is producing various word combinations and sentence structures.

WF can also be defined as writing the text in an easy-to-read manner in which no element exists causing the reader to pause while reading. Fluent writing means that the text is cohesive, and the reader does not waste an excessive amount of time thinking about the writer's intended meaning. Brand and Brand (2006) mentioned that a writer is considered fluent when s/he is able not only to put words on paper without exerting excessive effort, but is also able to establish relationships between ideas. According to this point of view, fluency in writing is ensured when ideas are organized in line with an order in writing, when they are described in words known by all and address the point with clear evidence. Ideas and feelings should be well-organized and presented in a coherent manner so as to ensure fluency.

WF looks at the ability to quickly and accurately write words and simple sentences (Miller, 2013). WF limits the time participants have to complete the task, and quickly come up with and write down sentences based on visual and written prompts (McGrew, Schrank & Woodcock, 2007). WF looks at the ability to fluently write words and sentences (Miller, 2013). Tests typically measure this by having test-takers write simple sentences as quickly as possible and scoring them based on the amount written rather than on the quality of the sentence (Miller, 2013). However, there is a need for redefining the term fluency from urging the learner to write as fast as s/he could under pressure of limited time into helping learners to expand, reflect, broaden their visual thinking, mentioning every slight piece of information and decoding the previewed visual media in addition to using technology.

WF development activities need to be message focused; an error focus works against fluency because if there is correction, learners will slow down in favor of correctness. In a

writing course, feedback on correctness can occur in a different part of the writing program and can depend on the types of writing learners are doing (Nation, 2013).

Deno and Marston (2006) define fluent reading as the way that “an individual easily processes text and that the processing of text encompasses both word recognition and comprehension” (pp. 179–180). Applying this definition to fluent writing implies that it is the approach a learner spontaneously produces written text, and that the generation of written text encompasses both text generation (translating grasped ideas into words, sentences, paragraphs, and so on) and transcription (translating words, sentences, and higher levels of discourse into print). Therefore, fluent writing comprises the ease with which a learner both generates and transcribes text.

Hayes and Chenoweth (2001) continued to develop this approach, defining fluent writing as text production rate within a certain period. According to Lannin (2007), writing fluency is a concept related to the number of words written per minute and the degree of harmony and cohesion of ideas. The various definitions proposed for WF may have resulted from the different indicators used for measuring it. Many L1/L2 writing process studies (e.g. Hayes & Chenoweth, 2001, Hatasa & Soeda, 2000) measured WF in terms of the composing rate, i.e. the number of words written per minute obtained through dividing the text quantity by the time spent writing. Other reported measures of WF include holistic scoring of the text (Ballator, Farnum & Kaplan, 1999), number of words and t-units (Elola, 2006), number of correctly spelled words written, number of sentences written, and number of letter sequences (Rosenthal, 2007).

Nevertheless, in relation to VT, WF is based on a holistic impression. Thus, the accurate choice of words in addition to, text length, flow and combining of ideas, accurate reflection, effective expression of meaning involving coherence and appropriate lexical



choices, interpretations and using evidence are required elements. Fluency is, therefore, demonstrated in the production of full amounts of accurate linked written product to convey the desired meaning under the borders of real time without pressure.

Henceforth, VT can be a very effective tool that may be used to promote learners' WF as it allows them to grasp the message, interpret it and reflect on it.

### **The Relationship Between Visual Thinking and Writing Fluency**

Huh (2016) maintains that using VT in EFL classrooms enables learners to look carefully at images, describing what they see, offer evidence for the ideas, and accept others' different views. Pictures, symbols, photos, maps, graphs, posters, cartoons, and text are tools that used to generate ideas and opinions. Tillmann (2012) adds that writing refers to the ability to interpret, comprehend, and express ideas verbally. Using visuals in writing enables learners to generate ideas by visual interpretations. Diamond, Gerde, and Powell, (2008) conclude that using writing materials without other aids like visuals cannot develop learners' writing.

A study investigated the relationship between visual imagination and ESL writing performance. Participants were divided into two groups: high intermediate and intermediate ESL writers. They received the intervention in pre-writing exercises for one semester. Data were collected through participants' essay assignments, participants' reflection reports, the researcher's visual imagination in developing learners' writing. Their essays quality in content and mechanics.

An experiment was conducted on improving reading ability using VT. Proponents of VT programs reported gains in reading achievement for learners who participated in the programs; however, none of these studies included a control group in which learners received

the same amount of reading instruction with no extra art (Burger & Winner, 2000). Thus, it is not known whether reading improvement was due to the integration of visual arts with reading instruction or whether improvement was simply due to extra reading instruction for remedial readers.

Two studies directly related to WF in learning English as a foreign language are those by Fellner & Apple (2006), and Herder & Sholdt (2014). Fellner and Apple utilized learner class blogs to improve the WF in English of Japanese adult learners with low-intermediate English proficiency. Herder engaged Japanese adult learners in extensive writing by getting them to write a lot, an equivalent strategy of VT to foster learners to expand writing. Both studies showed an increase in the number of words adult learners produced in their writing.

DeJarnette (1997) conducted an experimental study of the potential of the visual arts, equivalent to VT embedding visual media, for assessing academic learning by language minority learners. Learners used three types of responses in a writing/drawing assessment. The used technique of drawing is considered equivalent to VT. Some learners wrote their responses and then illustrated them; some first drew and then added words, and some only drew. Learners achieved higher scores for content knowledge about Mesopotamia and Egypt when they both wrote and drew than when they only wrote. Interdisciplinary scores were also higher when they both wrote and drew. Limited English-ability learners also scored higher on a writing/drawing assessment than a writing alone assessment. This study shows that drawing or in other words, VT may be one way to reveal what learners acquire and transmitted into written text.

### **Developing EFL Adult Learners' Writing Fluency Through Visual Thinking**

It is proposed that VT offers a powerful creative tool for translating non-linear thoughts into clear writing. This study seeks to identify and analyze the application of VT that adult learners use while looking, watching, listening or reading an on/offline media and how to embed them in developing their WF. This can lead the adult learners to support their own engaged, sustained, and fluent writing by choosing and reflecting on an off\online media by interesting them to enhance their WF. Contemporary learning standards also place importance on a learners' ability to create relevant, meaningful, and ethical academic products. NCREL and the MetiriGroup stress that adult learners in the 21st century must be creators of high-quality, knowledge products, and need the abilities to be knowledgeable designers, composers, and producers of visual information. VT is a complex process, and unraveling the bits and pieces of the process is labyrinthine. Visual information supports human thought processes and maintains long-term memory.

Harmer (2004) illustrates that pictures stimulate writing. Instructors can ask learners to describe a picture with time limit to encourage them to write quickly. Instructors should guide learners to elicit and acquire the needed vocabulary to describe the previewed visual media. Teachers can preview various visual media and ask learners to describe them in two sentences as conducting the sequenced VT stages. After finishing, the instructor paraphrases the generated thoughts into a coherent written text guided by the WF rubric.

Yee and Dhanapal (2013) studied the effect of visuals on young learners' writing. Participants were 15 learners at an international school in Malaysia. Researchers used three writing conditions: a short film, photographs, and a 3D model as writing prompts to stimulate learners to write. Data were collected through assignments and classroom observations. Results indicated that the writing prompts improved learners' writing.

Stobaugh (2013) asserts that learners prefer to use visuals in learning to overcome writing difficulties. Visuals facilitate the learning situations for beginners. Charts, tables, maps, and diagrams are used in teaching and assessing writing. Mills (2011) states that the use of visuals facilitates the process of writing which helps in transforming meaning into words.

Choo (2011), of Teachers College at Columbia University, in an article published by The National Council of Teachers of English, advances the question:

What if VT were given special emphasis in the English classroom? She proposes "a curriculum grounded on three principles: (1) sense and perception as starting points; (2) meta-conceptual links between visual and verbal texts; and (3) the art of visualization in the writing process.

As writing can be considered as a difficult task which is essential for success within the career. Stotz, Itoi, Konrad & Albert-Morgan (2008), state that as teachers, in order to assist learners in improving their writing, they must provide learners with feedback. To ensure providing this feedback, teachers must ensure that learners produce good writing level. One strategy to assist in increasing learners' writing production is through the use of VT. Because of its sensitivity to measuring academic fluency growth as well as the effects of other variables (e.g., instruction, intervention, teacher characteristics, child characteristics) (Christ, 2006; Christ & Coolong-Chaffin, 2007), using VT is expected to be the most appropriate strategy for enhancing the amount of fluency that occurs during learning.

Olshansky (2006) developed a writing curriculum focused on art making called Picturing-Writing. Essentially the process asks learners to draw and/or paint what they are thinking and then write a story to tell what is going on in the picture. The advantage to

making art first, Olshansky (2006) suggests, is that while creating, the seeds of story learners are forming, and those thoughts are represented in the product.

Research conducted by Olshansky (1998) seems to reveal this advantage. Olshansky (1998) studied first and second grade adult learners in 13 schools in three different states to conclude that the treatment group using the Picturing-Writing strategy dramatically outperformed the control group in quality of writing and use of visual elements within the story. Interestingly, those adult learners identified as at-risk for academic failure participating in the treatment group performed as well as adult learners not at-risk also in the treatment group (Olshansky, 1998).

A case study of two second grade adult learners, one boy and one girl, conducted by Andrzejczak, Trainin and Poldberg (2007) also utilizing Picturing-Writing strategies came to similar conclusions. They add, however, that the importance of art making preceding the writing process is crucial to success of the method, so that the initial words adult learners write do not constrain the artwork (Andrzejczak, Trainin&Poldberg, 2007). The presumption is that if learners write and then draw they see the process as complete even if the quality of either the artwork or the writing is significantly less than if they had created artwork first. Consequently, Andrzejczak et al. (2007) see creating artwork as the motivational tool necessary to encourage children into the writing process. In a larger scale follow up study, this time headed by Trainin, Andrzejczak& Poldberg(2006) indicated a similar conclusions about the use of Olshansky's Picturing-Writing strategies as the Andrzejczak et al., case study were found (Trainin et al. 2006). Moreover, Trainin et al. (2006) suggest that those adult learners motivated to write more and to a higher level of quality as a result of creating artwork, also increased their writing quality in other contexts, improved their writing ability in general, and showed more interest in reading tasks. Thus Trainin et al. (2006) revealed that

adult learners' transfer of knowledge gained through art making and creative writing made a positive impact on how well those adult learners did in other academic areas.

The emphasis on sensory experience, perceptual thinking, and visualization is a deliberate attempt to challenge reason, critical thinking, and linearity of thought that have come to dominate the teaching of writing in contemporary English classrooms. Typically, in such classrooms, critical writing is emphasized, as the ability to write a persuasive argument using logical reasoning or the ability to write an informed response by analyzing and evaluating a given text.

### **Commentary**

This chapter described a review of literature and previous studies concerned with visual thinking, writing fluency, visualization, the relation between visual thinking and writing fluency. Researchers and literature proved that WF can be enhanced through adopting VT. This can be strengthened through focusing the common features of VT. This chapter tackled the following points:

- The studies concerned with writing fluency, and how to enhance it using the visual thinking activities.
- Some visual thinking researchers maintain the importance of using visual thinking as a strategy in the educational field. The general procedures are concerned with enhancing the learners' abilities to deepen their thinking through posing various questions. Visual media could be used to help learners learn and retain information in order to be recalled later for a meaningful use.

- Visual activities serve to deepen the adult learners' understanding and help them make connections to their prior knowledge.

Some of the intended results after applying the VT program are:

- VT represents an effective teaching trend, which may help in improving the adult learners' WF.
- Enhancing the adult learners' collaboration through developing their abilities to think together, embedding peer discussions, and open discussions.
- Enhancing their abilities through deepening their thinking strategies and awareness of exposed diversity of knowledge tools, such as photography, videos, audio tracks, texts and painting.
- Adult learners should be encouraged to evaluate themselves, after the application of the VT, and reflect on their WF in order to identify their points of strengths and develop their writing.

The conclusion of this review gives instructional support to carry out the use of VT. VT is a rich and complex trend of teaching and learning that not only aligns with new initiatives in education that prioritize conceptual and procedural skills, but will contribute to education's transformation (Marshall, 2014). The study does not stick to VT as a strategy, but as an analytical context, an instructional scaffold, a new teaching trend, and various dimensions of visualization, interpretation, interaction, connection with prior knowledge, and decoding. This thesis illustrates the importance of VT, provides a historical overview of the VT and suggests applying VT activities to develop the language fluency and specifically the adult learners' WF.

## **Chapter Three**

### **Method**

This chapter covers the methods and procedures adopted in the current study. The design, participants, and settings of the study are described and illustrated. Also, the instruments are displayed, and explained. Finally, the researcher presented the obtained results out of the instruments implication

#### **Design of the Study**

This study adopted the one- group pre-posttest design along with a mixed research approach incorporating both quantitative and qualitative assessment. The one-group pre-posttest design was selected because the applied qualitative techniques aimed at detecting the development that occurred in the performance of the participants before and after implementing VT. The participants' pre and post-performances were compared. In addition, participants did not study any writing instructions concurrently with the proposed WF program.

#### **Participants of the Study**

The participants were 14 adult learners (N= 14), who studied Arabic as a first language. They were enrolled at the upper intermediate level, in a training course in Telecom Egypt Training Institute. In the current study, they had a five-week intensive English course, two sessions a week, for five weeks. The researcher aimed to boost the learners' WF. The duration of the program was about thirty five hours. The learners had a diagnostic placement test before starting the program to determine their current WF level. The placement test contained five



sections of listening, grammar and vocabulary MCQs, three reading comprehensions and two writing topics.

### **Settings of the Study**

TETI where the current study took place is located in Nasr City. This institute is established for training the employees of TE to boost their English Language knowledge and help adult learners acquire the language that would help them accomplish their work and eliminate language barriers.

### **Instruments of the Study**

The instruments of the current study are:

- The WF components list,
- The pre/posttest,
- The WF rubric,
- The proposed program which is based on visual thinking,
- Participants' satisfaction questionnaire.

**The WF components list (appendix A).** The list of writing fluency components was developed after reviewing the previous studies and literature pertinent to writing fluency. Based on the list, the researcher elaborated and developed the other instruments used in the study; including the writing fluency rubric and the pre/post writing fluency test. This list was also helpful in preparing the program's activities and discussion prompts which aimed at developing the writing fluency components.

*Structure of the list.* The list included five components of WF. The five main components are: Reflection, Focus and relevance, Visualization and giving interpretations,

sentence fluency, and the mechanics. These components are used as measuring scales based on the levels of the learners' WF production. The measuring scales are divided into emerging, developing, and fluent.

**The pre/posttest (appendix B)**

*Purpose of the test.* The pre and posttest was prepared by the researcher in order to measure the learners' performance. The test was conducted to determine the learners' entry level before applying the program, and after experimentation, to determine their level after the application of the program.

*Description.* The final version of the test (appendix B) consists of nine writing topics. The total score of the test is 100. Table 1 points out the question's number, the item's number, the writing fluency component it assesses, and the score given to each item.

**Table 1**

*Test Specification*

Number of questions	The assessed components	Score for each question
2	Reflection	20
3	Interpretation and Visualization	20
2	Sentence Fluency	20
2	Focus and Relevance	20
Applied on all the previous questions	Mechanics	20
Total 2+3+2+2=9		100

The researcher asked the learners to write essays for three hours on all of the nine topics. The first two topics are: *“Introduce yourself.”*, and *“Where do you see yourself in the future?”* Which measure the adult learners' ability to think of themselves and reflect a self-image. Then, the next three test topics are: *“Visualize that you were one of Titanic’s crews”, “ Explain and give some interpretations, of what you would do to improve the quality of education, if you were the Minister of high Education ”*, and *“Visualize what the world would be in 2050”*. The three previous test topics measure the adult learners' ability of interpretation

and visualization. The adult learners are asked to write about two more different topics which are; "*What do you think about artificial intelligence and if it would replace or have a major command over the human world.*", In addition to "*Write the first impression that comes up to your mind when your read the coming phrase:*

*"Happiness comes through satisfaction."* The previous two questions measure the sentence fluency in the produced written essays. The last two test topics, with a different measurable ability, are; "*Think what would happen if the earth stopped spinning?*", and "*expand your ideas about the given picture*", which measure the adult learners' ability of both "focus and relevance". The researcher embedded several pictures and links of videos to help the adult learners to think and visualize.

At the end of the program, the learners' writing fluency was measured through the same writing test. This time the test was also to be taken in three hours, but was used to assess participants' WF at the end of the program. For the purposes of the present study, this test was considered as pretest and posttest, and both sets were analyzed for fluency (measured by the rubric) and rated for quality by the researcher depending on the rubric in order to compare results at the beginning and end of the program and to address the research questions.

***Content.*** The test was designed and edited considering the following

- The final list of writing fluency components.
- Previous studies and literature concerned with writing fluency assessment.
- The suggestions and modification done by the supervisors.

***Piloting the test.*** The test was piloted on a group of adult learners in TETI. It was administered prior to teaching the WF program to a group of 14 participants. The purpose of that piloting procedure was to:

- Establish the reliability of the test;
- Determine the appropriate time needed to answer the test;
- Ensure the validity of the test; and,
- Check the suitability of the test to the participants in regard to the clarity of the questions and the appropriateness of their phrasing.

**Reliability of the WF Test.** Reliability of the WF Test was calculated using Cronbach's (1951). Reliability refers to internal consistency; that is, how closely related a set of items are as a group, so as to measure a single, one-dimensional latent aspect of individuals<sup>1</sup>. Table 2 shows the test reliability coefficient.

**Table 2**  
*Test Reliability Coefficient*

Cronbach's Alpha	N of Items
0.85	9

On analyzing the statistical value indicated in table 1, it was found that the alpha coefficient for the 9 items is 0.85, an appropriate coefficient alpha is higher than zero, and therefore the coefficient alpha suggests that the items have relatively high internal consistency. Therefore, the test is characterized by its high stability and consistency.

In addition to calculating the reliability coefficient for the test, the average time of the test was calculated according to the following formula, and the duration of one hundred and eighty minutes were found to be appropriate for answering all the questions included in the test.

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<sup>1</sup>Cronbach's Alpha: UCLA:Institute for digital research and Education (2015), from <http://www.ats.ucla.edu/stat/spss/faq/alpha.html>.

$$T1 + T2 + T3 + T4 + \dots$$

---

N

Where:

T1= the time taken by the first learner to finish answering the test

T2= the time taken by the second learner to finish answering the test

N= the number of all learners

**Validity of the WF Test.** The test was presented to a group of EFL specialists who are specialized in teaching English as a foreign language in order to determine how far the content of the questions included in the test is appropriately selected and phrased to measure learners' WF components and the EFL specialists admitted the modifications in the current version.

### **The writing fluency Rubric (appendix C)**

**Purpose.** The WF Rubric is an analytic device designed to evaluate participants' performances in the pre/post test. The purpose of this rubric is to capture most of what the adult learners at TE may achieve or develop in their WF, before and after the application of the program.

**Description.** The researcher acknowledges that no rubric can capture every nuance or dimension of the VT process. Measuring WF is very complex. Abdel Latif (2013) refers to a variety of measures of fluency including; composing rate, text quantity, creativeness, coherence and use of linguistic structures. In the current study, the researcher chose five components to be used in assessing the learners' WF.

The researcher analysed the WF components and constructed the WF rubric into five main categories (i.e., reflection, focus and relevance, visualizing and giving interpretation, sentence fluency, and mechanics). To determine the degree to which a learner's performance met the criteria of the task, three levels of descriptors which differentiate several levels of performance (i.e., Emerging, Developing, and Fluent) were specified and described in qualitative manners.

The first main category is "reflection". In the emerging level, the learners demonstrated a little or no understanding of the subject matter. Reflection is not written thoughtfully, however, it shows lapses, lacks development, details, in addition to weak support of the main idea. In the developing level, the learners demonstrate a basic understanding of the scenario and subject matter. Reflection is showing a little progress in self-reflection regarding the writing task. Furthermore, the writing essay contains a general sense of direction and addresses the topic. In the fluent level, the learners demonstrate a conscious and thoughtful understanding of the subject matter.

The second main category is "focus and relevance". In the emerging level, the learners' composed texts lack focus, and copies of unrelated words are displayed in the classroom. In addition, the written products lack relevance. In the developing level, the learners' composed texts have, generally, one focused central idea, and the learners use relevant details/examples. In addition, some sentences demonstrate an attempt to use credible / relevant ideas to support writing. In the fluent level, the learners' composed texts have clear focused central ideas; demonstrate effective use of high-quality, credible, and relevant ideas for writing. In addition, the learners' composed texts clearly address the topic and provide expressive details and examples.

The third main category is "visualization and giving interpretation". In the emerging level, the learners almost have no ability to visualize or interpret through previewed visual media. The production of the learners' essays is merely copies of unrelated words and unclear focused central ideas. In the developing level, some ideas are appropriately visualized and written, but need more interpretations. In the fluent level, many texts, videos or pictures are deeply visualized. Ideas are deeply reflected. The learners give deep interpretations, and produce reasonable responses of the displayed visuals.

The fourth main component is sentence fluency. In the emerging level, the learners attempt to write simple sentences. Some sentences are awkward, repetitive, and incomplete. There is a little or no variety of sentences. It is also noted that some sentences are unclear. The learners' written work is consistently difficult to follow because of choppiness, and run-ons, and sentences lack flow of ideas. Furthermore, variation of sentence is little. In the developing level, the sentences are coherent and complete. The learner uses some variety in sentences. Text flows smoothly, but still has some rough spots. There are some attempts to produce some complex sentences. It is also noted that there is reduction of sentences, which contain redundancy or repetition. Sections of writing have some flow. In the fluent level, the learners consistently use a variety of sentences; writing is natural and flows smoothly; and sentences begin with a variety of words. Furthermore, sentence structure is correct and creative, and there is natural rhythm, coherence and flow of ideas. Sentences clarify the important idea. Writing is smooth, natural and easy to read. Sentence type and length are varied and effective virtually. Every sentence begins differently, and adds value to the text.

The fifth main component is mechanics. In the emerging level, the learners' writing lack punctuation, spelling, and grammar. Meanings are not clear; literal translation, and the text needs much editing. Furthermore, many familiar words are misspelled/ or spelled

phonetically. In the developing level, Punctuation, and grammar are usually present. In addition to many familiar and unfamiliar words are generally spelled correctly. Phonetic errors generally do not affect the clarity of the text. The text needs some editing. In the fluent level, Punctuation, and grammar are written correctly. Familiar and unfamiliar words are correctly spelled. Furthermore, slips do not affect the clarity or effectiveness of the text. The text is perfectly written.

***Rating the rubric.*** The rubric consists of five WF components, which were included according to the final form of the list of WF components. Each of the five components is rated according to a rating scale ranging from the 'emerging level' to the 'fluent level'. Thus, learners could achieve a score starting from '1', which is equivalent to the emerging level (indicating the lowest performance) to '3', which is equivalent to the fluent level (indicating the highest performance).

***Validity.*** Content validity of the WF rubric was established through ensuring that the rubric really measures and reflects the WF components and concepts previously generated and stated in the WF list.

### **The Visual Thinking Program ( appendix E)**

***Purpose of the program.*** The proposed program (Appendix E) was designed to identify and promote the WF components and strategies of a group of adult English learners; through adopting VT.

***Performance objectives of the program.*** By the end of the program, the learners were expected to:

- Express their thoughts, have flow of ideas through enhancing their reflection ability, and demonstrate a conscious and thoughtful understanding of the visualized items.



- Reflect ideas precisely on the written essays; demonstrate significant depth of self- reflection on the topic using prior knowledge.
- Provide focus, relevance and evidence for their opinions.
- Demonstrate effective use of relevant ideas to support their writing.
- Clearly address the topic and provide expressive details/examples.
- Make predictions based on evidence, which leads to flow of ideas.
- Share their ideas and consider alternative viewpoints.
- Enrich their thinking ability, and think from different perspectives.
- Visualize different sources / items and think deeply to reflect new relationships.
- Give deep interpretations, and produce reasonable responses of the displayed visuals.
- Use a variety of sentences, and begin the writing texts with a wide range of appropriate vocabulary.
- Have a correct punctuation, capitalization and write using correct grammar.

***Description of the program.*** The program is based on adopting VT to enhance the adult learners' WF. The program consists of 10 sessions including two orientation sessions to explain what VT is. These two sessions explained the program components, and illustrated the meaning of the term VT; its usage and its expected positive effect on enhancing WF. Furthermore, the targeted WF components were identified during the application of the eight session activities. These eight session activities contain various pictures and videos, which the instructor used to elaborate and enhance the WF components. Some essential elements should be acquired by the end of the program as follows;

- how to visualize, interpret, reflect,
- expanding ideas through collaborative activities of sharing ideas,

- decoding previewed visual media in depth,
- Finding relationships, evidence, and how to link them with their prior knowledge,
- Additionally, provoking learners' thinking and learning abilities using VT was achieved through :

1- Identifying the items of pictures, videos and text.

2- Posing some questions such as: What is going on in this picture, movie, or text? And why? To help the learners give rationale evidence of their responses and what more can we find? Which provokes the learners' interpretation ability?

3- Brainstorming learners' ideas in interacting processes to generate and elaborate ideas.

4- Eliciting some questions to help learners give rational and evidence of their responses.

5- Supporting the learners' interpretation ability.

- Helping learners to increase their individual reflections using some online programs such as "x- mind", "graphic organizers", photostory3,
- Brainstorming and exchanging ideas, posing questions, and giving possible explanations through open- peer discussions.
- Helping learners give reasonable solutions for some problems, guided by the instructor. All solutions are directed toward achieving the intended learning outcomes (ILOs).

The VT Program included the following:

Two orientation sessions. The purpose of which was to raise the participants' awareness of the various strategies of VT, the strategies' importance and application. The point

of this part was to make the concept of VT clear in the participants' minds, to pave the way and to involve them in application.

Eight sessions, one different topic for each, tackling some activities and applications. Open-ended questions are aroused with the application of VT focusing on learning to look at and make interpretations from on/offline media. The topics were selected precisely to cover various aspects of participants' interests.

Each lesson, in Part II, starts with duration of the session, overview, objectives, and warm up activity, followed by information. That is to build learners' knowledge about the topic and increase their understanding of its various perspectives. The sessions are divided into three stages lead in, procedures, and post activity.

**Sources.** In order to prepare the program's activities, several sources were used such as the internet by searching for types of videos and pictures that would assist in holding discussions and posing questions created by the researcher.

**Duration of the program.** The program contained 10 sessions, three hours each. There were 2 sessions a week and the program lasted for five weeks. The total of the program's duration cannot be calculated due to the home assignments with immeasurable duration.

**Activities and learning strategies.** The activities target developing the participants' WF through applying and designing some VT activities embedded in the program. Each activity was illustrated before the application. In addition to the previously written illustrations before each activity, participants' collaboration was reinforced in various interactive techniques in peer work (e.g. peer editing), in groups (small group discussions), or the entire group (class discussion, and debates). Some questions can be used in ways to improve the learners' observation abilities and allow for detailed group discussion as follow:

1-What's going on in the previewed visual media?

2-What are your reasons for this?

3-What more can you reflect?

4-What are the relations between the components picture, photo, or of each video?

5- Any other possible questions, based on the activity that would help to deepen the learners' visual thinking, which may lead to improving their WF such as;

- Identification Questions
- Planning Questions
- Clarification Questions
- Simplification Questions

Some more techniques are used to deepen the learners' WF as follows

- Paraphrasing learners' responses validating individual views, demonstrating language use, and reinforcing a range of ideas
- Facilitating learners' discussions and encouraging scaffolding of observations, and interpretations.
- Urging learners to support opinions with evidence, listen and share information and ideas, to construct meanings together.

**Assessment.** The instrument used to evaluate the learners' WF and they had to write fluently. Moreover, each response is ensured to be heard and acknowledged, and then paraphrased. As discussion evolved, various related answers were linked to be sure of helping adult learners being aware of their converging and diverging views, and of their developing

abilities at constructing shared meanings. Then, learners were assisted in making connections across content areas to extract deeper meaning and foster more understanding than is possible through adopting VT.

Open-ended questioning were used in addition to adult learner-centered facilitation techniques; including strategies for listening and paraphrasing to create adult learner-driven and engaging group discussion environments.

Engage adult learners in this program about a complex problem, activities were carefully created of visuals either on/offline data, with an emphasis on providing evidence while considering and building off the contributions and perspectives of their peers.

Adult learners' progress was supported by facilitating discussions of carefully selected works of visual media either on/offline media.

Based on the previous indications, the assessment of the learners' WF through putting into consideration the following forms:

- Every activity or discussion aimed to assess the learners' WF abilities since the learners had to assess each other's proposed reflections and opinions and agree on the most effective, relevant and valuable opinion.
- Open, pair, and close discussions had to be checked regularly in order to assess the learners' progress and to activate the role of the instructor as a facilitator.
- Throughout the program, the learners' responses and discussions had to be analyzed and paraphrased to embed the targeted phrases, idioms, and implicit grammar corrections.
- Summative assessment had to be applied at the end of the program through the administration of the post WF test.

### **Participants' Satisfaction Questionnaire:**

*Purpose.* The questionnaire was designed to:

- Help learners to assess and improve the program of the study.
- Measure level of satisfaction with the instructional program.
- Figure how well the instructional program reached its intended outcomes/goals
- Identify ideas about how the instructional program could be improved.
- Provide useful data in a form that requires minimal analysis (e.g., 85% of participants are satisfied with the training received).
- Help the researcher in conducting the qualitative evaluation part of the current study.

*Description.* The Participants' Satisfaction Questionnaire consists of (12) questions which cover all the aspects of the instructional program, as they give the participants the chance to reflect on the program book and its content, activities, collaborative learning techniques, what they liked/ disliked and how this educational experience has affected them.

## Chapter Four

### Results and Discussion

This chapter tackles, illustrates and discusses the results of the study. This chapter is divided into three sections. The first section starts with detailed quantitative data analysis of the pre/posttests results through statistical treatment and the verification of the research hypotheses to determine the significance of the differences between the pre and posttests' results. Then, results are interpreted and discussed. The second section presents qualitative analysis of the data obtained from some of the participants' writings. Then, the data obtained by the participants' questionnaire is analyzed. Finally, there is a general conclusion on both the quantitative and qualitative findings.

#### Results of the Study

Results of the study were fulfilled through answering the thesis main question presented in the first chapter: "What is the effect of using VT on improving the adult learners' writing fluency?" The answer of the previous question comes from the first hypothesis.

**The first hypothesis.** The first hypothesis states that "There is a statistically significant difference at the significance level of 0.05 between the mean scores of the study participants on the pre and post WF test administrations with regard to the development of their "overall WF" favoring the post test scores".

To verify this hypothesis, the researcher examined the hypothesis, and the results of both pre and posttest administrations were statistically analyzed and compared to determine the significance between the learners' "overall WF" mean scores in the pre and post administrations of the WF test using T-test for paired samples. These results are clarified in Table 3:

**Table 3**

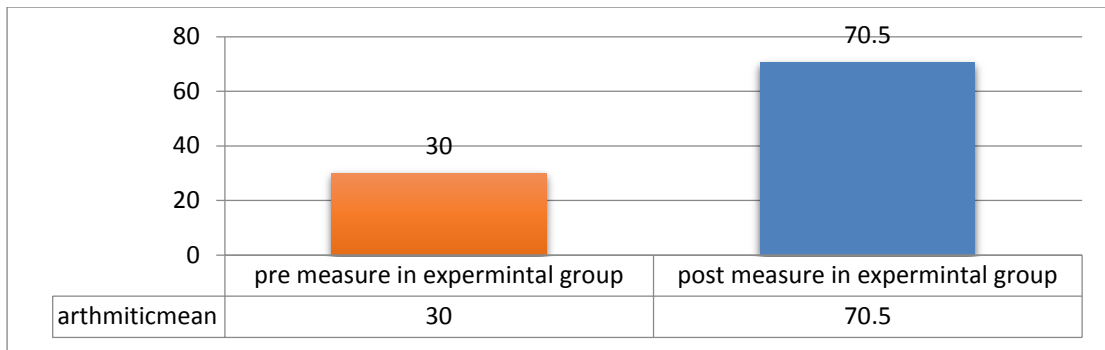
*T-test Results of Differences Between the Learners' Mean Scores on the pre and post WF Regarding Their "Overall WF".*

Overall WF	N	M	S.D	D.F	Tc value	T tab	Probability value	Effect size
Pre application	14	30.00	5.76	13	31.68	1.77	.000	91%
Post application		70.50	7.71					high

Table 3 shows that there is a statistically significant difference at the 0.05 level between the learners' mean scores in the pre and post administrations of the WF test with regard to "Overall WF" in favor of the posttest. The learners' mean scores in the pretest of the WF have reached (30.00), whereas the learners' mean scores in the posttest of the WF have reached (70.50). It is noticed that learners' mean scores in the posttest administration were higher than their mean scores in the pretest administration. The value of t-calculated (31.68) is bigger than the value of t-table (1.77). Also, the probability value of T. calculated (0.000) is less than the significance level of 0.01, which indicates statistically significant difference at the significance level of 0.01 in favor of the posttest. It could be concluded that the proposed program was effective on developing the adult learners' Overall WF; therefore, the first hypothesis could be accepted.

The experimentation's effect size regarding "overall WF" was also specified. The effect size value of WF total scores is higher than 0.80, which is a high effect size indicating that the study's program had a high effectiveness in developing the learners' "overall WF". Figure 1 illustrates the difference between the learners' mean scores on the pre and posttest with regard to "overall WF".





**Figure 1.** Differences between the learners' mean scores on the pre and posttest regarding their "overall WF".

**The second hypothesis.** The second hypothesis states that "There is a statistically significant difference at the significance level of 0.05 between the mean scores of the study participants on the pre and post WF test administrations with regard to the development of their Reflection favoring the post test scores".

To verify this hypothesis, the researcher examined the hypothesis, and the results of both pre and posttest administrations were statistically analyzed and compared to determine the significance between the learners' Reflection mean scores in the pre and post administrations of the WF test using T-test for paired samples. These results are clarified in Table 4.

**Table 4**

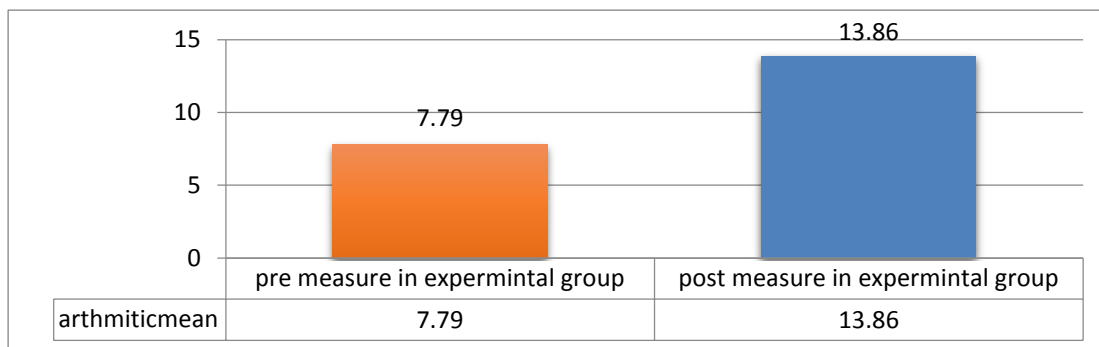
*T-test Results of Differences for Paired Samples Between the Learners' Mean Scores on the pre and the Posttest With Regard to Learners' "Reflection"*

Reflection	N	M	S.D	D.F	T.c value	T tab	Probability value	Effect size
Pre application	14	7.79	2.19	13	17.11	1.77	.000	65%
Post application		13.86	2.47		high			

Table 4 shows that there is a statistically significant difference at the 0.05 level between the learners' mean scores in the pre and post administrations of the WF test with regard to their

"reflection" in favor of the posttest scores. The learners' mean score in the pretest of the WF has reached (7.79), whereas the learners' mean scores in the posttest of the WF has reached (13.86). It is noticed that the learners' mean scores in the posttest administration were higher than their mean scores in the pre administration. The value of t-calculated value (17.11) is bigger than the value of t-table (1.77). Also, the probability value of T. calculated (0.000) is less than the significance level of 0.01, which indicates statistically significant difference at the significance level of 0.01 in favor of the posttest. It could be concluded that the proposed program was effective on developing the adult learners' reflection; therefore, the second hypothesis could be accepted.

The experimentation's effect size regarding "Reflection" was also specified. The effect size value of this component total scores is higher than 0.80, which is a high effect size indicating that the study's program had a high effectiveness in developing the learners' "Reflection". Figure 2 illustrates the difference between the learners' mean scores on the pre and posttest with regard to "Reflection".



**Figure 2.** The significances between the learners' mean scores on the pre and posttest regarding their "Reflection".

**The third hypothesis.** The third hypothesis states that "There is a statistically significant difference at the significance level of 0.05 between the mean scores of the study participants on the pre and post WF test administrations with regard to the development of their "sentence fluency" favoring the post test scores".

To verify this hypothesis, the researcher examined the hypothesis, and the results of both pre and posttest administrations were statistically analyzed and compared to determine the significance between the learners' sentence fluency mean scores in the pre and post administrations of the WF test using T-test for paired samples. These results are clarified in Table 5.

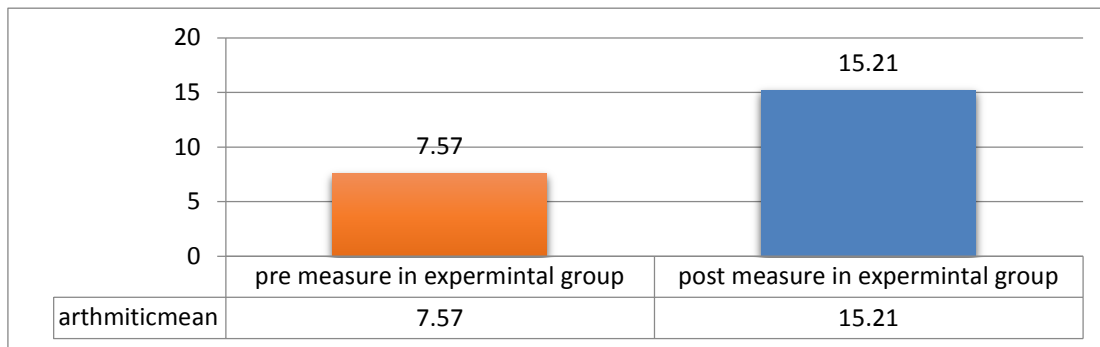
**Table 5**

*T-test Results of Differences for Paired Samples between the Learners' Mean Scores on the Pre and the Post WF Administration Test with Regard to their "Sentence Fluency"*

Sentence fluency	N	M	S.D	D.F	Tc value	T tab	Probability value	Effect size
Pre application	14	7.57	1.60	13	15.33	1.77	.000	80%
Post application		15.21	2.32					

Table 5 illustrates that there is a statistically significant difference at the 0.05 level between the learners' mean scores in the pre and post administrations of the WF test with regard to their "sentence fluency" in favor of the posttest scores. The learners' mean score in the pretest of the WF has reached (7.57), whereas the learners' mean scores in the posttest of the WF has reached (15.21). It is noticed the learners' mean scores in the posttest administration were higher than their mean scores in the pre administration. The value of t-calculated value (15.33) is bigger than the value of t-table (1.77). Also, the probability value of T. calculated (0.000) is less than the significance level of 0.01, which indicates statistically significant difference at the significance level of 0.01 in favor of the posttest. It could be concluded that the proposed program was effective on developing the adult learners' sentence fluency; therefore, the third hypothesis could be accepted.

The experimentation's effect size regarding "sentence fluency" was also specified. The effect size value of this component's total scores is higher than 0.80, which is a high effect size indicating that the study's program had a high effectiveness in developing the learners' "sentence fluency". Figure 3 illustrates the difference between the learners' mean scores on the pre and posttest with regard to "sentence fluency".



**Figure 3.** The difference between the learners' mean scores on the pre and posttest regarding their "sentence fluency".

**The fourth hypothesis.** The fourth hypothesis states that "There is a statistically significant difference at the significance level of 0.05 between the mean scores of the study participants on the pre and post WF test administrations with regard to the development of their "visualizing and giving interpretation "favoring the post test scores".

To verify this hypothesis, the researcher examined the hypothesis, and the results of both pre and posttest administrations were statistically analyzed and compared to determine the significance between the learners' visualizing and giving interpretation mean scores in the pre and post administrations of the WF test using T-test for paired samples. These results are clarified in Table 6.

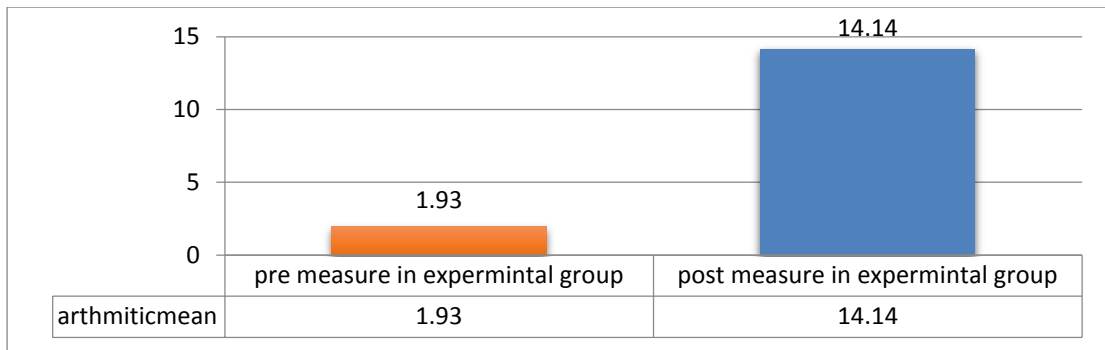
**Table 6**

*T-test Results of Differences for Paired Samples between the Learners' Mean Scores on the pre and the post WF Administration Test With Regard to Their "Visualizing and Giving Interpretation"*

<b>Visualizing and giving interpretation</b>	<b>N</b>	<b>M</b>	<b>S.D</b>	<b>D.F</b>	<b>Tc value</b>	<b>T tab</b>	<b>Probability value</b>	<b>Effect size</b>
Pre application	14	1.93	.82	13	24.20	1.77	.000	94%
Post application		14.14	2.17					high

Table 6 shows that there is a statistically significant difference at the 0.05 level between the learners' mean scores in the pre and post administrations of the WF test with regard to their "reflection" in favor of the posttest scores. The learners' mean score in the pretest of the WF has reached (1.93), whereas the learners' mean scores in the posttest of the WF has reached (14.14). It is noticed that the learners' mean scores in the posttest administration were higher than their mean scores in the pre administration. The value of t-calculated value (24.20) is bigger than the value of t-table (1.77). Also, the probability value of T. calculated (0.000) is less than the significance level of 0.01, which indicates statistically significant difference at the significance level of 0.01 in favor of the posttest. It could be concluded that the proposed program was effective on developing the adult learners' visualizing and giving interpretation; therefore, the fourth hypothesis could be accepted.

The experimentation's effect size regarding "visualizing and giving interpretation" was also specified. The effect size value of this component's total scores is higher than 0.69, which is a medium effect size indicating that the study's program had a high effectiveness in developing the learners' "visualizing and giving interpretation". Figure 4 illustrates the difference between the learners' mean scores on the pre and posttest with regard to visualizing and giving interpretation".



**Figure 4.** The difference between the learners' mean scores on the pre and posttest regarding their "visualizing and giving interpretation".

**The fifth hypothesis.** The fifth hypothesis states that "There is a statistically significant difference at the significance level of 0.05 between the mean scores of the study participants on the pre and post WF test administrations with regard to the development of their "focus and relevance "favoring the post test scores".

To verify this hypothesis, the researcher examined the hypothesis, and the results of both pre and posttest administrations were statistically analyzed and compared to determine the significance between the learners' Focus and Relevance mean scores in the pre and post administrations of the WF test using T-test for paired samples. These results are clarified in Table 7.

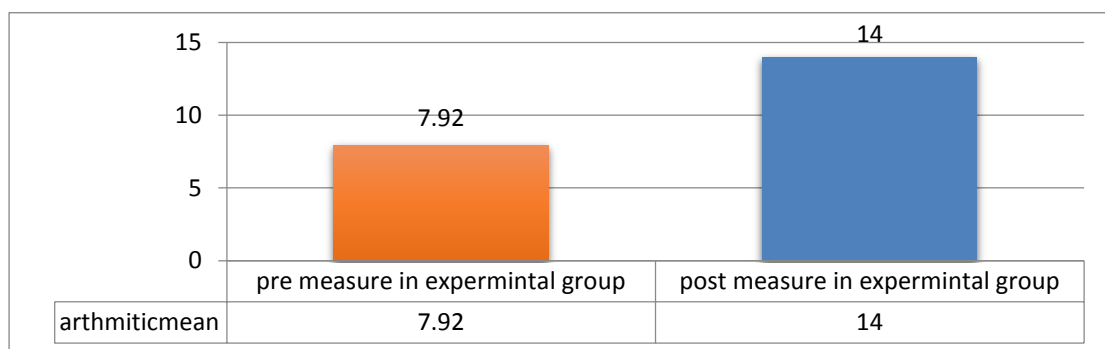
**Table 7**

*T-test Results of Differences for Paired Samples between the Learners' Mean Scores on the Pre and the Post WF Administration Test with Regard to their "Focus and Relevance"*

Focus and Relevance	N	M	S.D	D.F	Tc value	T tab	Probability value	Effect size
Pre application	14	7.923	1.54	13	14.27	1.77	.000	69%
Post application		14.00	2.60					

Table 7 shows that there is a statistically significant difference at the 0.05 level between the learners' mean scores in the pre and post administrations of the WF test with regard to their "reflection" in favor of the posttest scores. The learners' mean score in the pretest of the WF has reached (7.92), whereas the learners' mean scores in the posttest of the WF has reached (14.00). It is noticed the learners' mean scores in the posttest administration were higher than their mean scores in the pre administration. The value of t-calculated value (14.27) is bigger than the value of t-table (1.77). Also, the probability value of T. calculated (0.000) is less than the significance level of 0.01, which indicates statistically significant difference at the significance level of 0.01 in favor of the posttest. It could be concluded that the proposed program was effective on developing the adult learners' focus and relevance; therefore, the fifth hypothesis could be accepted.

The experimentation's effect size regarding "Focus and Relevance" was also specified. The effect size value of this component's total scores is higher than 0.69, which is a medium effect size indicating that the study's program had a high effectiveness in developing the learners' "focus and relevance". Figure 5 illustrates the difference between the learners' mean scores on the pre and posttest with regard to "focus and relevance".



**Figure 5.** The different significance between the learners' mean scores on the pre and posttest regarding their "focus and relevance".

**The sixth hypothesis.** The sixth hypothesis states that "There is a statistically significant difference at the significance level of 0.05 between the mean scores of the study

participants on the pre and post WF test administrations with regard to the development of their "mechanics" favoring the post test scores".

To verify this hypothesis, the researcher examined the hypothesis, and the results of both pre and posttest administrations were statistically analyzed and compared to determine the significance between the learners' mechanics mean scores in the pre and post administrations of the WF test using T-test for paired samples. These results are clarified in Table 8.

**Table 8**

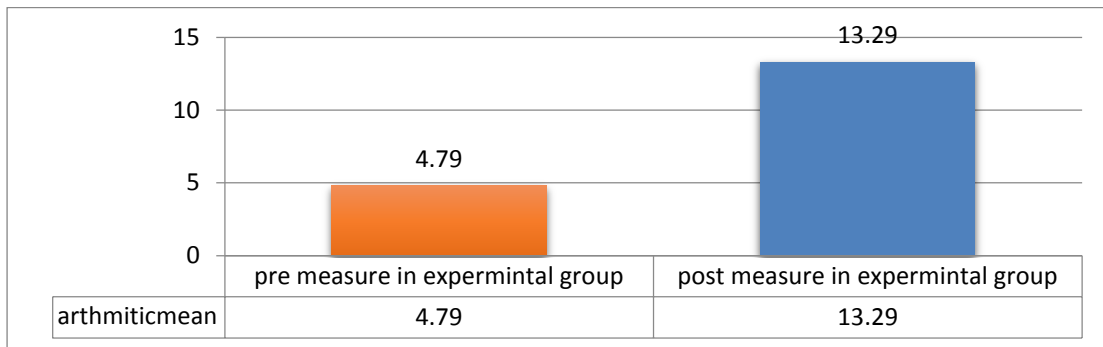
*T-test Results of Differences for Paired Samples between the Learners' Mean Scores on the Pre and the Post WF Administration Test with Regard to their "Mechanics"*

Mechanics	N	M	S.D	D.F	Tc value	T tab	Probability value	Effect size
Pre application	14	4.79	1.36	13	17.80	1.77	.000	90%
Post application		13.29	1.54					

Table 8 shows that there is a statistically significant difference at the 0.05 level between the learners' mean scores in the pre and post administrations of the WF test with regard to their "mechanics" in favor of the posttest scores. The learners' mean score in the pretest of the WF has reached (4.79), whereas the learners' mean scores in the posttest of the WF has reached (13.29). It is noticed the learners' mean scores in the posttest administration were higher than their mean scores in the pre administration. The value of t-calculated value (17.80) is bigger than the value of t-table (1.77). Also, the probability value of T. calculated (0.000) is less than the significance level of 0.01, which indicates statistically significant difference at the significance level of 0.01 in favor of the posttest. It could be concluded that the proposed program was effective on developing the adult learners' Mechanics; therefore, the sixth hypothesis could be accepted.



The experimentation's effect size regarding "mechanics" was also specified. The effect size value of this component's total scores is higher than 0.69, which is a medium effect size indicating that the study's program had a high effectiveness in developing the learners' "mechanics". Figure 6 illustrates the difference between the learners' mean scores on the pre and posttest with regard to "mechanics".



**Figure 6.** The different significance between the learners' mean scores on the pre and posttest regarding their "mechanics".

**The program effect size.** The discussed sections show that the hypotheses were verified. The effect size value determines the effect size of the independent variable on the dependent variable. The program effect size, which ranges between low effect and high effect, was calculated. The program's effect size was calculated through the following formulas:

$$n^2 = \frac{t^2}{t^2 + df} d = \frac{2\sqrt{n^2}}{\sqrt{1 - n^2}}$$

$n^2$  : Eta squared     $t^2$ : T valuesquared     $df$ : degree of freedom

**Table 9**

*The Range for the Significance of the Effect Size:*

Effect size = 20	Effect size = 50	Effect size = 80
Low	medium	high

Table 10 illustrates the effect size of the independent variables on the dependent variables regarding each WF component:

**Table 10**

*The Program's Effect Size Regarding Each WF Component*

<b>Components</b>	<b>N</b>	<b>T-cal</b>	<b>Eta-squared</b>	<b>Sig.</b>
Overall WF	14	31.68	0.91	<b>High</b>
Reflection	14	17.11	0.65	<b>Medium</b>
Sentence fluency	14	15.33	0.80	<b>High</b>
Visualizing and giving interpretation	14	24.20	0.94	<b>High</b>
Focus and Relevance	14	14.27	0.69	<b>Medium</b>
Mechanics	14	17.80	0.90	<b>High</b>

Table 10 shows that the effect size of overall WF, visualizing and giving interpretation, and mechanics is high because their effect size values are higher than 0.80. This reflects their high effectiveness in the dependent variable and in developing the targeted components. However, the effect size of Reflection, sentence fluency and focus and relevance is medium. This reflects their medium effectiveness in the dependent variable and on developing the targeted components.

## **Discussion of results**

The statistical analysis illustrates the effect of the proposed WF program on developing the English WF and its components as shown in the previous tables and figures. The previous figures and tables showed the significant difference between the mean scores of the study participants on the pre and post WF test and the effect size, which ranges between high and medium. More clarifications are in the following discussion.

First, Results clarified in table 10 through using t-test and calculating the effect size of t-calculated value (31.68) indicated a significant statistical difference between the learners' mean scores in the pre and post administrations of the overall WF test compared with t-table (1.77) which indicated development in the learners' level of overall WF. In addition, the effect size score (91%) is high which indicated high effectiveness in the dependent variable and on developing the overall WF.

Therefore, it could be concluded that from the previous results the learners' overall WF was developed due to the program; and that the program was effective in developing the learners' witting fluency. Therefore, the first research hypothesis has been verified.

Second, Results clarified in tables 3, 4, 5, 6, 7 show that through using t-test and calculating the effect size of t calculated value of Overall WF (31.68) with a high effect size , sentence fluency( 15.33) with a high effect size, visualizing and giving interpretation (24.2) with a high effect size, and mechanics (17.80)with a high effect size. The previous results indicated a significant statistical difference between the learners' mean scores in the pre and post administrations of the WF components test compared with t-table (1.77) which indicated high development in the learners' level of WF components on the dependent variable and on developing the WF components.

Moreover, there is a variation of some results of the WF components. The results were illustrated using t-test and calculating the effect size of t calculated value of reflection (17.11) with a medium effect size, and focus and relevance (14.27) with a medium effect size. This may be due to the fact that the study participants did not get the opportunity to enhance these components before. These WF components need more attention because they are rarely addressed or developed in the instructional environment. Most of the English instructional courses work mainly on the learners' acquiring and memorizing of the vocabulary and learning explicit grammar rules without knowing how to use them correctly. Some instructors need to modify their method of teaching to help learners use the new taught vocabulary, reflect the new vocabulary upon the targeted essay, and know how to form correct structured sentences through learning implicit grammar rules. Teachers need to encourage their learners to reflect their points of view, tackle the controversial issues from different aspects, and not to deviate from the targeted points. All the learners' points of view are respected but need the learners' orientation. The learners could give his learners a hand to choose sentences, which contribute to the fulfillment of writing, and to retain relevant information and ideas. Loose and insufficient details are remarkable for most of the English writing essays of the Egyptian students. Therefore, learners need more instruction to support these components.

The effectiveness of VT in developing the adult learners' WF as a whole may be due to the following reasons:

- VT was not only enhancing the EFL adult learners' WF, but it also developed their language fluency as a whole.
- VT could boost the learners' creativity. VT could activate different parts of the learners' brain, and help the learners come up with new and unique ideas that learners would have never come up with otherwise.

- VT uses facilitated discussion to encourage learners to practice respectful, democratic collaborative problem solving that transfers to other classroom interaction contexts.
- VT enhances thoughtful participation to nurture verbal language abilities, and writing assignments to assist transfer from oral to written fluency.
- VT contributes to greatly enhanced verbal and thinking abilities, in all learners, from challenged and non-English language learners to high achievers.
- VT develops observation abilities, evidential reasoning, and speculative abilities, and the ability to find multiple solutions to complex problems.
- VT helps to activate learners' background knowledge (linking of new ideas to previous knowledge), in addition to enhancing their construction of knowledge (connecting ideas and concepts to each other and to visuals)
- VT broadens the learners' minds through deepening and enhancing their thinking strategies, visualizing, interpreting, reflecting and raising their awareness of a diversity of knowledge, such as photography, videos, audio tracks, texts and painting.
- VT encourages adult learners to self-evaluate themselves, after the application of VT, and to reflect on their WF in order to identify their points of strengths and weaknesses.
- VT has an essential role of helping learners to generate ideas and paraphrase, foster strong thinking strategies, enhance vocabulary development, and grammar reinforcement.
- VT urges EFL adult learners to think for themselves, learn from others' perceptions and link them with their prior knowledge.

- VT encourages EFL adult learners to collaborate through fostering them to think together, have peer discussions, and open discussions to share mutual thoughts.
- VT urges learners to provide evidence to explain their interpretive comments, listen and share information and ideas to construct meanings with their colleagues.

### **Qualitative Analysis and Discussion**

In this section, the researcher will tackle two parts the first part will be the discussion of qualitative data elicited from some samples of the participants' writing. The second part will examine some responses from the participants' satisfaction questionnaires. The following part of this chapter will handle qualitative analyses of data obtained from these sources on trying to explore the qualitative findings and the researcher adds further explanation to findings. Some samples of the participants' writing essays will be discussed.

#### *Analysis of the learners' discussions with regard to the targeted WF components.*

WF is a wide area, which needs support and enhancement. Learners should be able to focus on higher order activities such as ideas organization, paragraphs cohesion and better word choices. WF contains several components that should be taken into consideration such as reflection, focus and relevance, visualization and giving interpretation, sentence fluency, and mechanics. These components are tackled by the program and enhanced by the learners. Some samples of the learners' writings are selected and analyzed quantitatively and qualitatively

*The first measured WF component is "reflection"*. Reflective writing is an evidence of learners' reflective thinking. In an academic context, reflective thinking has series of steps:

- 1- Thinking back of something such as a certain topic or an idea.

2- Analyzing the topic or idea (thinking in depth and from different perspectives, and trying to add more illustrations to the topic).

3- Reflection is an exploration and an explanation of events – not just a description of them in addition to linking them to the learners' prior knowledge.

4- The instructor stimulate the learners to think reflectively in some presented topics such as:

- *Introduce yourself.*
- *Where do you see yourself in the future?*

One of the learners responded, to the first question "*Introduce yourself*", both before and after the application of the program as follows:

Before applying the program:

*"My name is Abeer Ibrahim Ammar. I work in TE as an Engineer. I'm married. I live in Damietta."*

After applying the program:

*"My name is Abeer Ibrahim Ammar. Born in Damietta, Egypt in 1983. I graduated from Alexandria University, Faculty of Engineering, and Communication Department in 2004. And the MSc from Mansoura University in 2013. Now I am a PhD learner in Alexandria University, Faculty of Engineering. I have been working at TE Company since 2005. I have a small family, consisting of my Dad, my Mum, my big brother, and my husband and we all live in Ras El-Bar. Thanking God, Dad and Mum are alive. Dad is a very kind man, he was a general manager in education*

*and teaching, he taught me a lot of things in my life such as, how to rely on myself and how to be an effective person in the society. But now he is very sick, he is suffering from cancer colon and I am asking God every time for him speed recovery and fine health. Mum also is a very kind woman, she loves me very much and she always try to make everything that I like my big brother is an accountant, he is 40 years old. My husband is the manager of the operation and maintenance department in Damietta. He is very kind and he always encourages me to achieve my goals. Thanking God, all members of my small family have good relationships with each other. I have to do my best now to finish my PhD thesis and achieve my goals. I have to enhance all my skills in communications, language, and to enhance my ability of teaching."*

Another learner responded to the same topic as follows:

Before applying the program

*"My name is Eman Ahmed Abdel Maksoud. I work in TE as an engineer. I am married and I have three children. I like my job. It's very interesting."*

After applying the program

*"My name is Eman Ahmed Abdel Maksoud. I am 31 years old. I am from Qaluob. I graduated from computers and information faculty-Zagazeg University. I have master degree in computer vision, one of the AI branch. My thesis title was "A proposed clustering segmentation technique for 3D images". The idea of the thesis is to detect the brain tumor in 2D*



*and 3D MRI accurately with minimal execution time. I am MCDBA (Microsoft certified database administrator). I worked in TE since 2008 and now I'm the manager of employee affairs in the east delta sector. I like my career and I want to develop my knowledge and experience to be more professional. I love my parents and my sisters. I have five sisters and I'm the oldest one of them. Four of them were married. The fifth one is learning in faculty of computers and information of Ain shams university. I got married in 2010 and my husband from Elmansoura. He is a trainer of human resource. We have three children. The oldest one is Ahmed who is five years and three months, Fatemais 4 years. Adam is the youngest child who is five months. I love my small family very much and I hope to be in best health and happy. I love my family and we are so related to each other but because of the long distance between Qaluob and El Mansoura, we don't meet continuously. This thing of course affects myself but I try to be always with them especially in occasions. I travel there whenever circumstances permit and follow them by phone permanently."*

Another example of the learners' response on the same given topic:

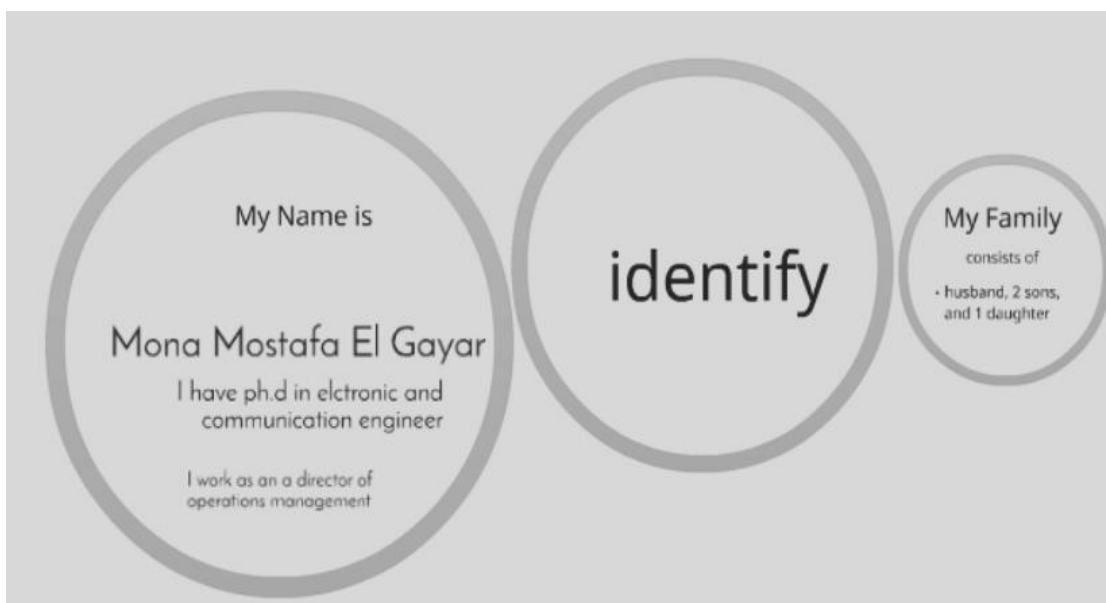
Before applying the program:

*"My name is Mona Mostafa El Gayar. I work as a director of operations management. I am married with two sons."*

After applying the program:

*"My name is Mona Mostafa El Gayar. My residence is in Mansoura. I work as a director of operations management with 25 years' experience."*

*Public administration is the operation and maintenance of east delta centrals. And my sector is operation and maintenance of network hardware availability for Alexandria and Bahari. My family consists of my husband, two sons and one daughter. One of sons is an engineer while the other is a dentist and my daughter is an engineer. The Relation between each individual and other in the family is very good, and there are cooperation and love."*



**Figure 7.** A mind map of basic information about the learner.

In the pretest, it is noticed that there was low reflection abilities as a common feature of all learners. The learners mentioned only very few responses and the gap was detected between their existing knowledge and their experiences; showing little or no understanding of the subject matter. Reflection is not thoughtfully written, however, it shows lapses, lacks development, and details; and there is no support of the main idea.

Most of the learners' reflections were only few words and did not tackle the topic from different aspects. They demonstrated no or basic understanding of the handled topic and subject

matter. They showed little progress in care and depth of self-reflection regarding the tackled task.

After the application of the program, the learners were asked to answer the test again. In the posttest, It is noticed how the participants reflected on their responses seeking reasons, evidence, and supporting their ideas/ stance.

The instructor encouraged learners to reflect on the given topic in order to process their knowledge, record, and analyze all datum. The learner started to demonstrate a conscious and thoughtful understanding of the topic at hand. Reflection is thoughtful, carefully written, and it demonstrates significant depth of self- reflection on the topic. The learners reflected ideas clearly and this is evident in some samples of the learners' written production, after conducting the posttest.

Another participant tried to reflect on the given topic in a more creative way. The participant created a mind map (figure 7), to identify her written product and supported her reflection after conducting the posttest in addition to demonstrating a conscious and thoughtful understanding of the Topic.

Below are other examples where one of the learners responded to the second topic entitled: *"Where do you see yourself in the future?"* as follows:

Before applying the program:

*"I dream to be a PhD holder and get a promotion."*

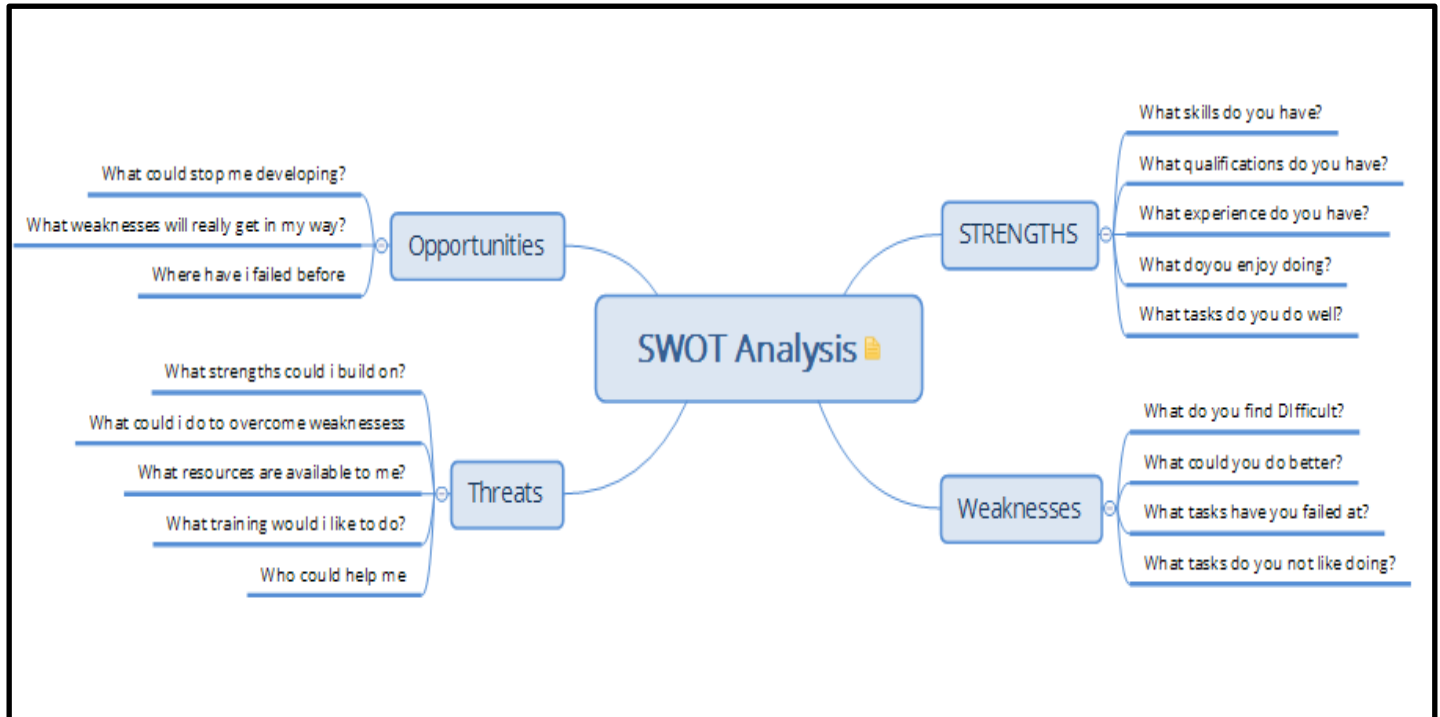
After applying the program:

*"I'm happy that I've made the decision to continue learning English. Securing my son's future is very important to me. I want him to know that he can do and go anywhere in life, all you need is a plan and try to achieve it. The feeling of fulfillment, having accomplished what you set out to do is wonderful. Where do I see myself in the future, I have many dreams and goals in my life. I have great inspiring to be a PhD holder since I was a child. But I realize that there are so many other ways I need to take in order to achieve them. I think in five years that I see myself a PhD holder and living my life to the fullest with my son. I pass to an intersection in my life where I choose what to do with my future and choose what will make me happy. My plans for the future are getting a better rank of employment and with supporting family. I know that I have yet to begin my life everything up until now has been practice, as if I was in a prison and it is only now that I am beginning to break out and do things for myself. I must work really hard to give my son a better future so it will be easier for him to concentrate more in studying in university, because without post studies, there's really no future for anyone."*

In the pre-test, almost all of the participants' responses were short, vague, and not expressive. They could not reflect using reasons or evidence.

In the posttest, participants tried to visualize, and link their dreams with their prior knowledge. They dealt with the issue from different perspectives. They expanded their thoughts, and deepened their thinking of the ranks and dreams about their families and themselves. They were able to analyze, respond, and support their reflections on the given

topics using mind maps. One of the participants drew a mind map to help her in organizing and figuring the essay (Fig:8).



**Figure 8.** Illustrates the ideas the participant constructed.

*The second measured WF component is "interpretation and visualization".*

Visualization based on the five senses can engage learners and empower their learners' WF. Visualization means to read the wordless pictures, movies, photos, even texts, or any other visual media, and infer the implicit messages out of the pictures, media and texts. The instructor raised some topics to measure their visualization and interpretation ability. The instructor taught the learners how to consider themselves a part of the scene using their senses. The topics are " *Explain and give some interpretations, of what you would do to improve the quality of education, if you were the Minister of high Education*", " *Visualize that you were one of Titanic's crews. Reflect on your responses*", and " *Visualize what the world would be in 2050.*" Some samples of the learners' responses were as follows.

**The researcher:** Divide the pictures, including each scene of the displayed movies, into quadrants and try to consider yourselves part of this scene. What can you see around you?

What would you do? Would you take the risk? What can you smell, feel, and what is your reaction? Visualize the topics from all aspects and from your perspective using mind map programs to organize your responses.

One of the learners' samples was as follows:

Before applying the program:

*"Titanic is a ship that sank about hundred years ago. A lot of people died on the ship's first voyage. I don't expect my response would be if I were one of the crew, but I may try to save as many people as I could. I don't know how, but I would try. It is a crisis that a ship with a lot of travelers on board sink on its first voyage."*

After applying the program:

*"Titanic the most famous ship and most tragic at sometimes. When did it start its voyage, what happened to cause its sinking. Its captain had declared that it was a mighty ship and nothing could harm it. What about building the ship, its crew, passengers. What was the fatal about its construction? What were the safety cautions that could be taken into consideration? Finally, what after the disaster."*

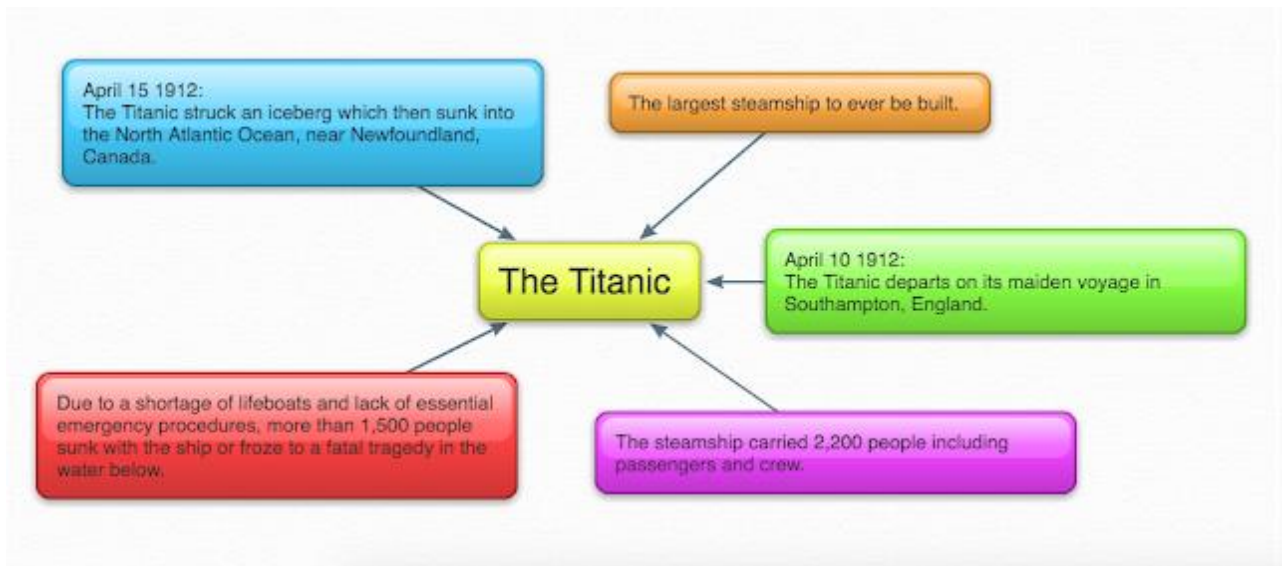
*"Titanic was ranked as one of the most luxurious and elite ships of its time. It carried high- ranking, wealthy people and celebrities. In addition to employees, tourists and journalists were travelling on the second class. At last the largest group of passengers was in third class."*

*"Titanic's departure set on April 10. The ship sailed with full speed that may cause its destruction with the iceberg. That when a look out saw the iceberg they couldn't avoid the crash. The low level of the ship was quickly filled with water and by some rapid calculations, the ship had only an hour and a half a float, then the captain asks for help. All that happen on April 14."*

*"If I were there, I would slow down the pace of travelling and take precautions of slowing down the speed. I would also maximize the number of life boats ordered to be loaded and the evacuation process. There was a tragic disorder whole loading the boats. Some boats loaded by minimum numbers of the passengers and with the chaos and confusion increasing most of the victims were of the women and children because they were not first aboard."*

*"I will try to spread a relieving atmosphere cause panic was everywhere, some preferred to escape with their lives and others chose vulnerably to give up their lives to those who had families or lovers. Families were separated; men saw their wives and children losing their lives without being able to help them."*

*"If I am still alive, I will try to consolidate the dead people's families. Some received the sinking of the ship as a moral lesson for its creators who called it unsinkable at the beginning of the voyage challenging the laws of nature. It's a hard experience that anyone would experience."*



**Figure 9.** Shows a mind map a learner created.

In the pretest, the participants responded to the topic entitled "Visualize that you were one of Titanic's crews. Visualize and write your responses." It is noticed how the participants were not able to visualize, or think deeply of the given pictures. They did not know how to deepen their thinking and visualize themselves as part of the scene. The participants lack involvement of all senses or emotions to describe their responses. They responded superficially with limited descriptive dimensions. They did not recognize how to solve the faced problems because of the shortage in acquiring the concept of visual thinking.

It is noticed, from the previous written production, that the participants did not expand their ideas while illustrating their response towards how to have major roles in visualizing various methods to save the passengers. Almost there was no ability to visualize or interpret texts or pictures, copies of unrelated words and unclear focused central ideas. The participants just wrote a very limited description of the ship and intensive responses of their roles of how to save the passengers of that ship. The participants did not try to deepen their thoughts of the given visuals such as pictures, headlines of some newspapers or even videos.



After the application of VT activities to enhance, support and deepen the participants' visual thinking, it is noticed, in the posttest, that a common feature of all learners was expanding their ideas, tackling the topic from different perspectives, and visualizing the scene from several dimensions. The learners gave deep interpretations, and produced reasonable responses of the displayed visuals. The learners' attempted to save as many souls as they could and to produce alternatives was a prominent sign of embedding the VT while composing the essay.

Some of the learners tried to organize their essay using a mind map program to organize their written production for example; as shown in (Fig. 9). It is also noted how one of the participants tried hard to have a clear vision about all the experienced incidents by the crew in order to visualize his accurate responses to produce effective solutions of the faced crisis and to elicit some useful pieces of information through reading the articles that were published in some newspapers at that time

The learners responded to the third topic entitled *"Explain and give some interpretations, of what you would do to improve the quality of education, if you were the Minister of high Education"* which examines the learners' ability of interpretation and visualization. The coming paragraphs illustrate one of the learners' responses before and after the application of the program.

Before applying the program:

*"If I were the minister of education, I would try to invest each mentality to higher the quality of education and dedicate a budget to support this important field."*

After applying the program

*"The problems in today's society with the education system are endless. So many learners are deprived of the quality of the education they deserve today. Many universities are improving but deserve more attention with the ministry supplies in Egypt such as smaller lecture halls, and need more equipment such as data show and smart boards. Schools today are in a bad need of change. Learners deserve to have the education they need to prepare them for the future because they are the future of Egypt. Universities should help to prepare learners to succeed by providing tablets instead of hard copies and supplies that are updated. Knowledge should be updated every five years so that the new information will not be left out for the learners. It is essential to update our knowledge. The more updated curricula are, the more knowledge we gain. Also, the supplies needed should be obtained earlier so that assignments can be written in the textbooks more than having handouts of papers. We need to find a way to raise more money so that we can have materials ready for learners."*

*"If I were the minister of education, it would be probably more suitable to find appropriate lecture halls, modern equipment, and trained instructors to be equipped with the new methods of teaching. Crowded lectures halls are becoming more and more of a problem as the learners' numbers continues to grow. Lectures halls are packed each day as learners sit on the floor or stand up during a full class period. It is very important to have a lectures hall that is comfortable and spacious. The learner ratio should decrease so learners get more attention from instructors. The comfort of being in a lectures hall will help learners concentrate more in school because they have a place to sit on a desk and write instead of*

*having to worry about finding a place to sit. Building portable lectures halls will help resolve it."*

It is noticed that the learner tackled the topic from various aspects in order to detect the massive catastrophe that is facing our educational system and he visualized some of these problems and produced some positive solutions, from his perspective, as shown in the essay. The participant visualized as if he is sitting on the chair of the minister visualizing that he is ordering and making legislations to maintain and overcome current and expected problems.

The participants also responded on the topic entitled "Visualize what the world would be in 2050." The following lines show one of the learners' samples before and after the application of the program.

Before applying the program

*"By 2050, a lot of changes could happen to our planet. Climatic changes, a lot of extinct animals, and maybe several wars would happen. I see at the pictures and the video that I watched about Sophia, the human robot, that technology would not be the same. I would like to live till I learn and experience these new technological devices."*

After applying the program

*"By mid of this century, there will probably be 10 billion people on the planet, consuming all resources and leading ever more technologically complex lives. What will our cities seem? How much will artificial intelligence progress? Will global warming cause catastrophic changes, or will we be able to engineer our way out of the climate change crisis?"*

*"Making predictions is, by nature, a hard business but I think from different points of view, the result is, Life in 2050, several climatic changes in world population and population growth will certainly be miserable. There is a saying that it's likely that by 2050 most of people in the world will live in the city, and will have a significantly less average age than people today."*

*"Large migrations from the countryside to the city could disrupt government and harm the people of city, finding less job vacancies and less apartments to live in and rapidly advancing technology will continue ever more rapidly. Cities of the future won't look like science-fiction movies. Auto-driving cars, which have a pilot driver, will make the roads safer, driving more efficient, and provide faster transports. A larger version of driverless cars may reduce the roads' sever accidents."*

*"I think that one of the major catastrophes that we face in the world is the global warming. The global warming causes the rise of the earth's temperatures, rising of the seas levels which may cause in the near future of dumping the land."*

*"We may live longer and remain healthier, I hope Allah gives us good health and long life to obey him. I think we may not live to be 120, through new discoveries that would he discover new medicines, extending of people's age could be expected. AIDS researcher says, but we will know a lot more about the virus than we do today—and scientists will be much more efficient. I hope to have both good health and suitable environment for all the Egyptians."*

In the pretest before the application of the program, the instructor showed them some pictures and did not teach them how to visualize or think deeply. The instructor did not illustrate how to let learners be part of the scene, smell, deepen their thinking, analyze, reflect, or elicit meanings from the provided visuals. Consequently, the provided sample, as preceded, was expected.

In the pretest, it is noticed from the previous paragraph, that the participant could not expand his ideas more than what he produced. The participant watched a video and scanned several pictures with his eye; however, he could not deal with the produced visuals because he lacked the principles of VT that would help in accomplishing and constructing his essay.

In the posttest, the participant experienced the VT activities and dealt with various applications during the VT program. It is noticed that videos and pictures were deeply visualized. Ideas were deeply reflected. The learner gave deep interpretations, and produced reasonable responses of the displayed visuals.

***The third measured WF component is "sentence fluency"***. Sentence fluency is about the learners' logical and intuitive abilities to construct flow of ideas together of all elements to form a text. The instructor asked the participants the following question to measure their fluency: *"What do you think about the artificial intelligence and if it would replace or have major command over the humans' world."*, and the second topic was *"Write the first thing that comes up to your mind when you read the coming phrase: Happiness comes through satisfaction."* The following lines show some of the participants' responses in the pre and posttest.

Before applying the program:

*"The artificial intelligence is important in our life. All devices depend on the artificial intelligence. It is considered one of the major elements that should be developed. I think that it would do all the work of human beings in the near future."*

After applying the program:

*"Artificial intelligence is defined as the main use of technological equipment to control completely human brains. This is a result of technology revolution whereby systems developed behave intellectually, reason rationally and have the ability to effectively interpret the environment in real time. They have made it possible to simulate essential jobs that need expertise. Playing some games and programming are an excellent example of an intellectual mission. The designed chess game which acts like the human opponent is capable of thinking of millions of movements which are incapable to human beings."*

*"Robots are essential in our world. I have watched Sophia, the human robot, which could do the same as any human. She could think, feel, and imitate humans as if she is real. I feel panic when I think what would happen if such robots could replace us, as real humans."*

*"Artificial intelligence has changed the missions that humans could operate gaming, academia, medicine, weather forecasting. Many organizations with their different needs have benefited from using technology. The military for example has been able to design robots to*

*access remote areas that are inaccessible and dangerous to the lives of militants to keep them safe from explosions."*

*"Artificial intelligence has advantages and disadvantages. the most important is low costs reduction, performing with speed, flexibility, and reliability. In addition, an Artificial intelligence system could work for several days without stopping. Robots don't say "I am ill. I am happy." These systems are made to work forever. Organizations can use them once and again since unlike human beings who die. They can do different jobs such as working on computers, smart phones, and tablets amongst others without altering their performance."*

*"In conclusion, artificial intelligence systems have been useful tools in solving complex problems that are seen to be beyond the level of human thinking. Although the characteristics of these systems are drawn from human intelligence, they exhibit more intelligence than the human beings themselves. This is just the beginning in computer revolution and more improvements are likely to be seen in the near future."*

In the pretest, the instructor received the learners' responses on the first topic, "What do you think about the artificial intelligence and if it would replace or have major command over the humans' world", it is noticed that most of the participants could not write much through tackling that topic, as showed in the previous sample.

It is noticed, in the previous words, that the preceded written text lacks natural flow and rhythm. It is noticed the frustration and massive struggling the learner faced. Furthermore, the learner lacked the selection of appropriate word patterns, vocabulary and content.

In the posttest, after the application of the VT program, the enhancement that happened to the learners' flow, texture, good selection of word patterns, and content could be noticed. The participants consistently used a variety of sentences; writing is natural and flows smoothly, sentences begin with a variety of words, sentence structure is correct and creative, rhythm, coherence and flow, sentence type and length are varied and effective.

The participants responded on the second topic; "*Write the first thing that comes up to your mind when you read the coming phrase: happiness comes through satisfaction*" before and after the application of the program was as follows:

Before applying the program

*"Satisfaction is important and main factor to be happy. Some people think that happiness comes through having large amounts of money. Maybe they're right, but it's not the main cause of happiness. We should have satisfaction and accept all what we face either its hard or good. I'm very satisfied with my life."*

After applying the program

*"I don't know one person who doesn't want or need more money. Whether it's for a new car, a holiday or just to pay by credit cards – people would always appreciate some extra pounds in their pockets. However, is having a job that pays really well but offers not much further really the key to long term overall happiness?"*

*"It's a very old inquiry, and everyone differs in his perspective. The term 'happiness' is defined many different ways to various people. To some,*



*happiness is simply having a small place to sleep safely and a slice of bread. Others think that happiness comes through owning attractive objects such as technology, nice clothes, cars etc. To afford the finer things in life, we usually want a high salary – but at what point does job satisfaction take a back seat to accommodate for a low salary?"*

*"Various factors are coming into this controversial issue. Satisfaction vs. high salary. At the beginning, the answer to this debate than we recommend happiness to other stuff: Get a job that you love and work your way up to earning a lot. However, there are a lot of things to put in our minds. For example, If you have responsibilities back at home such as children then you might go out to find another job for long hours for a high earning job. It drives you away from your family to spend more time at home considering how much you asked to pay. Another factor to consider is where you work. In cities like Cairo, Alexandria and Giza, a three to four-zero salary will be enough to cover the cost of living. After putting away savings, paying bills and other costs – how much do you have left over to spend on yourself? And is this an amount you'd be happy with?"*

*"Happiness tends to be achieved depending on the attitude of the person seeking it. If you can go to work and smile, have fun and meet nice colleagues, telling them your secrets, then I have the utopian job. If you're emotionally suffering at your job every day, then no amount of money in the world will ever make you content."*

In the pretest, it was noticed the learners' struggling to generate ideas about an unfamiliar topic, or organize their response. The learners attempted to write simple sentences.

Some sentences were incomplete or awkward. There was little or no variety in sentences and some of the sentences were unclear.

In the posttest, the learners reacted towards the same topic, as showed on one of the learners' samples, to generate as many words as they could on the given topic. Sentence structure was correct and creative. There were natural rhythm, coherence and flow, and sentences clarified the important idea. The learner's writing was smooth, natural and easy to read. Sentence type and length were varied and effective. Virtually, every sentence began differently, adding interest to the text.

*The fourth measured WF component is "focus and relevance".* Focus and relevance is the perception of sticking to the discussed topic and mentioning all the related ideas to this topic, either main or sub ideas. The instructor posed two topics, to measure the focus and relevance of the learners, for discussion. The first was "Think what would happen if the earth stopped spinning", and the second topic of a given picture "Expand your ideas about the given picture." The following lines indicated one of the learners' responses before and after applying the program.

Before applying the program

*"If the earth stopped spinning, every human being will die because the climate will change and according to this, animals, plants, and sources of water will drain. I think, according to the pictures, there would be hurricanes, and tsunami."*

After applying the program

*"At the beginning, the most essential sign of our lives is the sequence of day and night – the 24-hour 'thing' that we divide existence into, would be altered. It's a basic knowledge that the Earth takes 24 hours to complete one spin, which causes every creature on Earth to experience day and night. It's pretty basic: while spinning, the side of Earth that faces the sun is day and the side facing away from the sun is night. This cycle goes on and on, forming weeks, years. It is a sign of continuous of life is the coming of tomorrow".*

*"However, if Earth stopped spinning continuously, what it accomplishes in a single day takes a year to complete; countries on the side facing the sun would experience daylight for 6 months, while those living on the side facing away from the sun would experience a six-month night. This is precisely what life is like at the North and South poles today at different points of the year".*

*"A sudden stop of Earth's spin certainly wouldn't stop seasons from occurring continuously, but it would have a massive impact on the 'way' they behave. Currently, we experience a very smooth transition between various seasons; but in the absence of our planet's spin, it wouldn't be so comfortable. This would undoubtedly cause a change in the lives of humans, and many would cause death to many people. Also, for animals and other creatures, it would be even more difficult, as they would have a very hard time surviving in those conditions without any external aid (which they usually don't have. The death of various species across the globe."*

*"Due to the absence of the rotational motion, Earth's magnetic field might also vanish. Without the magnetic field, we would be facing hazards and harmful radiation. The sun would choose to throw our way. We have covered more about this fascinating battle between the Sun and our magnetic field. That is a hard moment that I wouldn't like to experience."*

In the pretest, as clearly indicated on the previous sample, all of the learners had generally one focused central idea, but lacked relevant details/examples. Some sentences demonstrated an attempt to use credible / relevant ideas to support the topic.

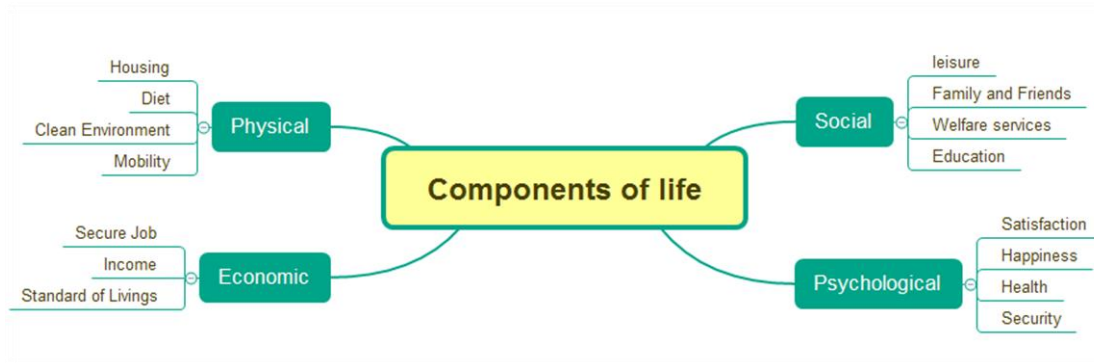
After the posttest, the learners started to have a clear focused central idea. In addition, they demonstrated effective use of high quality, relevant ideas in their writing. Furthermore, they clearly addressed the topic and provided expressive details/examples.

The learners responded to the second topic: "Expand your ideas about the given picture". The learners responded to the topic in both pre and posttest application. The following paragraphs show a sample of their responses in both stages:

Before applying the program:

*"I can see a ladder and a guy is climbing that ladder. The ladder is very tall and reaches to the sky."*

After applying the program:



**Figure 10.** A mind map which helps the learner in writing his essay.

*"Long term goals are what people need to become more responsible in one's life. We have to have a close look on our components of life to determine their priorities. These makes people more responsible and would allow them to put their priorities in order. I have four long term goals: a physical goal, an economic goal, a social goal and a physiological goal. In order to have a successful life, I have to be successful in four of them. These goals will help me to get better success in my current career. Personally, I would like to be more independent. I would like to be seen as a successful employee and have my own company. Responsibility allows people to see what important getting education to have a better life is. As I begin this new start in my life as a learner, there are many goals that I hope to achieve. Goals that I feel will define my success as a learner, and an employee. I have realized that to reach my many goals, I need to be aware of strengths and weaknesses I have. In doing some self-discovery I will be able to identify potential obstacles I will need to overcome, and what strengths I can rely on to help me."*

*"My main objective at this point is to be a successful learner. To do this I have set some smaller goals that will aide and help me in my quest to*

*become a successful learner. One such goal is that I would like to obtain knowledge not only from my instructors and course materials, but from my fellow learners as well. I feel that I can grow not only as a learner and an employee, but also as a person as long as I truly open myself up to learn from the experiences and knowledge of my classmates. As I gain knowledge I will be able to build my self-confidence. Through gaining self-confidence I believe I will make a much more valuable and well-rounded employee."*

*"The more self-confidence I have the more willing I will be to put myself out there. Self-confidence allows me to speak my mind, make mistakes and take criticism without letting it break me. I hope also to reach my goals as an employee, always get promotions at work and settle my own company. Thanks for everyone who allows me to learn new knowledge and makes progress at work with their constructive criticism."*

In the pretest, the lack of focus is noticed, in addition to low rates of expansion of ideas. The participant only focused on one aspect and did not tackle the topic from different aspects.

In the posttest, the learners' common features are effective use of high quality, credible, relevant ideas to develop appropriate ideas for writing. In the following sample, the participant started to clearly address the topic and provided expressive details/examples. Some learners drew mind maps to help them in constructing the essay (fig. 10).

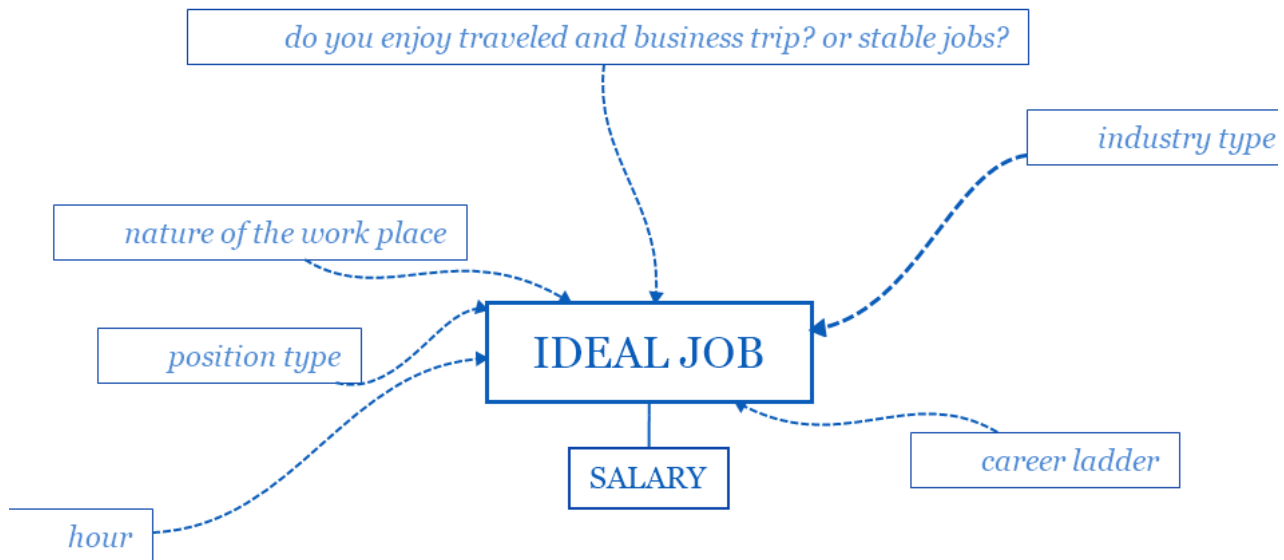
The following paragraphs showed another pre and posttest sample on the same topic as follows:

Before applying the program

*“There is a ladder and a man. The man is trying to reach the sky.*

*This is not a real picture. It is a Photoshop picture.”*

After applying the program



**Figure 11.** A mind map about ideal job.

*“How I imagine an ideal job? If you have a well-paid job, you can consider that you have a good job, but an ideal job has a lot of good things. Before actually speed up the pace and begin to look for a new job, you should take the time to answer the following question: “What is ideal job for me, exactly? And remember that if you did not think carefully about the type of job that you want already, the search for the chance to work will be vague and non-specific features, so be specific since the beginning. There are some ways to define the job that already suits you. There are several ways to define your job. They are described in the following lines.”*

*“Position Type: or what you love to do exactly, if you could find a job that you feel you want to work, you will feel a real pleasure while walking to work every morning. Industry type: or area that attracts your*

*interest, choosing the appropriate industry you will be of far-reaching effects on the future because most people spend their entire career in the same industry, which began in the first post. Type of company: whether it be a giant joint-stock company or limited ownership of the facility. Note that large companies give a prominent social center, but its interior may be stressful.”*

*“Career ladder: or rather you planning for the post allows you do everything yourself (such as engineering functions), or do you aims to reach the superior management jobs (such as the position of Chairman of the Board or the Executive Director). Anyway, now you have to choose the functionality that puts you on the first degrees of the career ladder you prefer.”*

*“Career building: Do you prefer jobs where they operate according to clear instructions from your boss, or functions that allow you enough flexibility to issue some of the judgments and decisions yourself? In addition to hours: How many hours will be able to work through what is the level of effort exerted your best in these hours? Do you prefer to work for 40 hours a week only, or are you ready for a job be required to the presence of the number of extended and non-predetermined hours?”*

*“Leisure & Travel: Do you enjoy traveled and business trips? Or do you tend to more stable jobs that do not involve a great deal of geographical mobility? Nature of the workplace: What is the nature of the place that helps you to increase your productivity? Are you in the big*



*rooms and offices work or limited space, open places or in private offices?  
Do you prefer as well as uniforms or ordinary clothes?"*

*"Workplace: are you ready to change your residence for the dream job? Do you think you will be ready in the future to move to a new place of residence to seize the opportunity for promotion? Basic salary and other financial aspects: Do you want to include compensation other than base salary elements such as bonuses and performance incentives, stock ownership, allowances, gratuities and pensions, the benefits of health insurance, and other moral and privileges such as car?"*

*"As often as possible to determine in more detail all aspects of the job that you want to get them before they actually begin to search for them, it was found that better and more focused. Very Few job seekers who have little to ask themselves: What is the position best suited for me?"*

*"In fact, most people do not believe that there is already a perfect job for them, and therefore they do not already devote enough time to determine what the perfect job is. The outcome of this situation is that they eventually become dissatisfied with their specialties and their careers as a whole. How can one access to what he wants that he did not know what he wants."*

In the pretest, the participant tried to write a general idea; one focused central idea, and used little relevant details/examples.

In the posttest, the participant drew a mind map to help him in organizing, generating and expanding his ideas about the tackled picture from his perspective as "ideal job" (Figure

11). The written essay demonstrated strong use of expressive relevant thoughts to develop his ideas for writing. The participant clearly addressed the topic and provided expressive details/examples.

### **Some Samples of the Participants' Satisfaction Questionnaires**

The participants wrote their positive points of view about the WF program and the impact of using visual thinking. They reflected on their employment of VT and how this enhanced their WF in particular, and the development of their English language in general.

#### **One of the participants wrote:**

*"I want to learn more about other strategies and techniques beside the VT because all my life, I didn't learn by such a strategy that helped me understand English and ways of writing."*

Some participants expressed their appreciation to the instructor because of the massive acquired knowledge through thinking visually.

#### **A participant said:**

*"I really liked learning writing forms and how to expand and organize my thoughts and ideas through some new ways such as the visual thinking."*

#### **Another participant said:**

*"Sharing ideas helped me to learn great and new vocabulary. I also learned that two minds are better than one."*

**Another participant said:**

*"Using visualization helped me to make up my mind, search for the smallest details, and change my judgment on some situations."*

The following participant indicated the benefits of learning, organizing, and brainstorming using mind map program and some new techniques such as questioning.

**The participant said:**

*"I did not learn English a lot through my educational stages. The old way or the traditional way of teaching was in Arabic. In this course, I learned a good way of writing the essay, the forms of essays, how to brainstorm through questioning, and organize my ideas using a mind map program."*

The participants also expressed their great appreciation to the activities included in the program

**The participant said:**

*"The activities were great and the ideas of the activities were new and helped us to deepen our thinking and direct them to support our writing topics. One of the activities was confusing that were talking about the surgeon who had to operate only one surgery and he had to choose among some patients. So, we should choose only one of them and mention our point of view. This urged us to think and to discuss it with our colleagues to have our final saying. It was very interesting and helped us to visualize and think deeply."*

**Another participant commented on the activities:**

*"The activity of Titanic was interesting and helped me understand what VT is, how to get the feeling that I was one of the crews and how and what would I act in this situation. I felt that I was really on that ship and felt everything. I heard the sounds of the other passengers screaming and I visualized the full scene as if I were there and this helped me to write more and more."*

All of the participants showed their great appreciation towards the VT.

The participants agreed on that they did not expect to find such a strategy applied in teaching.

**One of the participants said:**

*"I did not expected to learn English by such a new way. All my learning was through Arabic English translation and self-learning. I hope to continue learning through new ways like "The Visual Thinking."*

Some of the participants were annoyed because they did not get the opportunity to employ this strategy during their long life learning and they hoped they could apply it to speaking, reading and listening as well.

**One of the participants said:**

*"I didn't like only applying these activities on writing ability only but I would like to apply them on speaking as well."*

Another participant liked to work in groups and to have open discussions about the controversial topics, which enable them to exceed their expectations and acquire different information from different cultures.

**The participant said:**

*"I really liked to work and think with my colleagues, discuss and organize our work in brainstormed ideas that helped us to learn from different backgrounds."*

Another participant liked the various techniques of the presented media. Watching movies, reading text, seeing pictures and discussing the topics from different aspects enabled him elicit the implicit messages.

**The participant said:**

*"I like watching movies and especially cartoons because of their simple language and the amusing scenes. I learned how to look in depth of the displayed scenes not just at the scene in general but also all the characters, their way of dressing, the colors, the emotions, the backgrounds, and everything that may have hidden messages."*

The participants expressed their opinions about the program. The participants were asked to select one among three choices either "**very satisfied, somehow satisfied, or unsatisfied**" as follows:

- All of the participants marked the choice "**very satisfied**" about the inquiry "*The program's application and activities met my expectations.*"

- Thirteen of the participants marked the choice "**very satisfied**" about the inquiry "*What's your impression about the effectiveness of using VT on developing the WF?*" and the other participant marked "**somehow satisfied.**"
- Twelve of the participants marked the choice "**very satisfied**" about the inquiry "*What do you think of the applied activities?*" and the other two participants marked "**somehow satisfied.**"
- Eleven of the participants marked the choice "**very satisfied**" about the inquiry "*What do you think of the collaborative learning techniques?*" And the other three participants marked "**somehow satisfied.**"
- Twelve of the participants marked the choice "**very satisfied**" about the inquiry "*Are you satisfied with your WF progress?*" and the other two participants marked "**somehow satisfied.**"

The participants expressed their responses towards the program. The participants were asked to select one among three choices either "**some, all, or none**" as follows:

- All of the participants marked the choice "*All of the training was new*"
- All of the participants marked the choice "*All of the training was irrelevant.*"

The participants expressed their responses towards the program. If the program met the participants' expectations, the participants selected one among four choices either "**Strongly Disagree, Disagree, Agree, or Strongly Agree**" as follows:

- Twelve of the participants marked the choice **strongly agree** about the statement "*The program gave me the training and assistance I needed to develop the WF.*" The other participants marked the choice "**Agree**".
- All of the participants marked the choice "**strongly agree**" about the statement "*I would recommend this program to others.*"

- All of the participants marked the choice “*strongly agree*” about the statement  
*"The program's instructor was helpful and supportive."*

The previous opinions indicate the participants' deep ambitions and determination to learn through applying new strategies such as VT. It is also noticed that the participants had a great interest in acquiring fluency; in all of the English language abilities such as speaking, listening, reading and writing, through the application of new strategies. The participants were affected by the essence of the collaborative work in contrast to some language and soft skill sessions which lacked the concept of collaborative work. The participants expressed their deep appreciation to the up to dated activities which let the participants involve in thinking visually and visualizing every single scene as it happens live in front of their eyes. Warm atmosphere and the supporting learning environment helped a lot to enhance the participants' acquired knowledge and therefore the results were also affected positively by this warm atmosphere.

## **Conclusion**

This chapter displayed the quantitative and qualitative results attained through the study and the analyses of the results. It also concluded that that application of VT has accomplished effective progress on developing the adult learners' WF. This was evident through the statistical analyses of the quantitative results and the qualitative results. The next chapter presents a summary of the study in addition to recommendations for further research.

## **Chapter Five**

### **Summary, conclusions, and recommendations**

This chapter provides a summary of the current study including a summarized description of its problem, aim, research questions, instruments, participants, main procedures, in addition to results. The chapter then illustrates general conclusion, recommendations, and suggestions for further research.

#### **Summary**

Due to the rapid progress in all knowledge fields, we, as instructors, should be equipped with new instructional technique. We have to find alternative strategies to upgrade and modernize the old-fashioned strategies. The problem of this study is that some adult English learners lack the efficiency to write fluently and expand, interpret and visualize their ideas and link their thoughts with their prior knowledge. That was elicited from the pilot study. That was probably due to the ineffective teaching strategies followed during the educational learning stages, as well as the lack or the misapplication of the teaching aids, which affected their WF negatively.

The main aim of this study was to design a program that enables the adult learners to write fluently, by expanding and organizing their ideas, through implementing VT activities designed by the researcher. The program was conducted on fourteen adult learners in TETI. The participants were selected randomly with different English levels. The program included ten sessions and the duration of the program was about thirty five hours. The instruments of the study included pre/post WF test, the WF rubric, and the participants' satisfaction questionnaire.



## Research Questions

**The researcher had to answer the following main question:** *"How can visual thinking develop EFL adult learners' writing fluency in Telecom Egypt Training Institute?"*

**This main question elicited the answer of the following sub questions:**

- **Research question one:** "What is the current writing fluency level of Telecom Egypt Training Institute's adult learners?" This question was answered through holding some open discussions with a sample of adult English learners working in TE as well as a pilot study on the same sample of the adult English learners. That was also answered through administering a pre WF test to the study group to assess their level in WF.
- **Research question two:** *What are the WF components required for those students?* This question was answered through reviewing the literature and previous studies on WF. The components were elicited and the WF components list was prepared.
- **Research question three:** "What are the activities and components of a suggested program, based on visual thinking, that can be used to develop the writing fluency for the targeted learners?" In the light of the literature review, the pilot study results and the pre- test results, the researcher designed ten activities that cover the WF components. The first two sessions of the program were theoretical to introduce and illustrate the strategy to the learners. The instructor assigned the learners to work collaboratively, share their ideas derived from their previous experience and culture. The learners learned how to generate, organize, and expand their ideas using a brainstorming program such as x-mind program.

- **Research questions four:** "What is the effect of the application of a proposed program based on visual thinking on the targeted learners? By the end of the application of the program, the researcher conducted a post WF test to measure the adult learners' WF progress. The researcher analyzed the statistical data, through the rubric, to determine the progress of the learners. The researcher also elicited qualitative data of the learners' performance. Both quantitative and qualitative results and findings are presented in Chapter Four.

### **Results of the Study**

The results of the current study were elicited from both quantitative and qualitative analyses. The quantitative section included statistical comparisons of the participants' mean scores in the pre-test and their mean scores in the post-test. The qualitative section included analysis of the participants' writing samples and their responses to the participants' satisfaction questionnaire.

### **Hypotheses of the study**

- The first hypothesis states that "There is a statistically significant difference at the significance level of 0.05 between the mean scores of the study participants on the pre and post WF test administrations with regard to the development of their "overall WF" favoring the post test scores".
- The second hypothesis states that "There is a statistically significant difference at the significance level of 0.05 between the mean scores of the study participants on the pre and post WF test administrations with regard to the development of their "reflection" favoring the post test scores".

- The third hypothesis states that "There is a statistically significant difference at the significance level of 0.05 between the mean scores of the study participants on the pre and post WF test administrations with regard to the development of their "sentence fluency" favoring the post test scores".
- The fourth hypothesis states that "There is a statistically significant difference at the significance level of 0.05 between the mean scores of the study participants on the pre and post WF test administrations with regard to the development of their "visualization and giving interpretation" favoring the post test scores".
- The fifth hypothesis states that "There is a statistically significant difference at the significance level of 0.05 between the mean scores of the study participants on the pre and post WF test administrations with regard to the development of their "focus and relevance" favoring the post test scores".
- The sixth hypothesis states that "There is a statistically significant difference at the significance level of 0.05 between the mean scores of the study participants on the pre and post WF test administrations with regard to the development of their "mechanics" favoring the post test scores".

### **The qualitative section**

The researcher selected some samples of the learners' writing. These samples reflected the learners' acquisition of the WF. The selected writing samples reflected the learners' progress in organizing their ideas, working collaboratively, providing evidence on the posed writing essays, and visualizing the scene. The tangible progress helped in expanding the participants' ideas, deepening visualization and thinking abilities, and then writing fluently. The effect of the instructor's feedback was noticed in the learners' writing essays. The instructor taught the learners new vocabulary and grammar rules implicitly

through paraphrasing their ideas and the effect of this strategy was noted in their writing essays. The questionnaire reflected the learners' deep appreciation towards the strategy's application and their noted progress in their WF.

## **Conclusions**

This study aimed at investigating the effectiveness of using VT in developing the adult learners' English language fluency in general and on developing the adult learners' WF in particular. Based on the quantitative and qualitative analyses of the elicited data, the following conclusions were gleaned:

- The VT program proved to be effective on enhancing the participants' WF in general.
- The VT program proved to be effective on enhancing each single component of the participants' WF.
- The VT program was also effective on developing the participants' awareness of the basic WF concepts.

## **Implications**

- The program shed light on the importance of VT as a context of instruction and a strategy.
- The program approved its effectiveness in developing the participants' collaborative work through sharing their previous experiences cultural perspectives and background knowledge.
- The used activities served to deepen the adult learners' understanding, and helped them make connections to the tackled topics.

- VT strategy, devices, and technique were flexible enough to be adapted to meet specific lesson objectives and analyze complex visual texts in teaching English.
- VT offers instructors rich knowledge through which they could facilitate these types of learning processes for all of their adult learners.
- The participants reflected their deep appreciation towards the effectiveness of the instructional program, as they expressed in their satisfaction questionnaires.

## **Recommendations**

Based on the previous results and findings, the following recommendations are elicited:

- There is a clear evidence to support using VT in the classroom to encourage creative writing and enhance WF.
- Time and funding should be devoted to the instruction using VT for all instructors in all educational platforms.
- More opportunities should be provided for collaborative work between language learners.
- Rapport has a powerful positive effect on the learners, for that rapport should be enhanced among learners and their instructor.
- Instructors should use various types of VT based activities to strengthen the educational process in a constructive learning environment.
- Instructors should use satisfaction questionnaires, which help in giving the learners self-confidence and allow them to reflect their impressions and thoughts towards the educational process. This helps to improve the educational process in light of learners' needs.

- VT should be applied to develop other learners' language fluency.
- Teaching the English language and its grammar implicitly is more effective than teaching it explicitly through the use of VT contexts. This helps in acquiring the application of grammar rules without wasting effort and time on recalling the rule, which leads to speaking and writing improvement and fluency.

### **Suggestions for further research**

Researchers may further explore the effectiveness of applying VT in EFL learning and developing learners' WF. The following examples may be taken into consideration:

- Exploring the effect of collaborative learning on developing English language fluency
- Exploring the effect of mind-map programs on teaching and learning.
- Investigating the effectiveness of rapport on enhancing the learning outcomes.
- Designing a training program to train instructors on using nontraditional strategies and modern teaching aids which appeal to nontraditional learners nowadays.
- Exploring the effect of other strategies on developing the adult learners' WF.

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# Appendices

## **Appendix(A)**

### **Writing Fluency Components List**

### Writing Fluency Components List

<b>Writing Fluency Components</b>	<b>Description</b>	<b>Emerging</b>	<b>Developing</b>	<b>Fluent</b>
<b>Reflection</b>	Indicates the learner’s ability to demonstrate a conscious and thoughtful understanding of the subject matter. It also refers to the learner’s ability to reflect ideas clearly and thoughtfully, and to demonstrate significant depth of self- reflection on the topic.			
<b>Focus and Relevance</b>	Refers to the learner’s ability to have a clear focused central idea. Indicates the learners’ ability to demonstrate effective use of high quality, credible, relevant thoughts and to think of ideas and details which are highly related and relevant to the topic. In addition to The learner’s ability to address the tackled topic clearly and to provide expressive details/examples.			
<b>Visualization and giving interpretation</b>	Refers to the learner’s ability to visualize texts, videos or pictures deeply Indicates the learner’s ability to give deep interpretations, and to produce reasonable responses of the displayed visuals.			

<p><b>Sentence Fluency</b></p>	<p>Indicates the learner’s ability to consistently use a variety of sentences. The learner’s ability to write naturally and the ideas flows smoothly. The learner is able to write various words and sentences. Sentence structure is correct and creative.</p> <p>The learner is able to write with natural rhythm, coherence and flow, and sentences clarify the important idea.</p> <p>The learner is able to write varied and effective sentence types and lengths.</p>			
<p><b>Mechanics</b></p>	<p>Indicates the learner’s ability to use correct punctuation, spelling and correct usage of contextualized grammar rules.</p>			

## **Appendix (B)**

### **The Pre-Post Test**

## **The Pre-Posttest**

### **Covering page:**

#### **Introduction:**

This test is designed to measure adult learners' WF before and after applying the VT. The researcher used the pre and posttest to measure the performance of the learners. The researcher asked the learners to write essays for three hours on some topics.

#### **The test components:**

The test contains nine topics that help to measure the adult learners' WF, in different fields, with some illustrations using some visuals such as videos and pictures.

#### **Purpose of the test**

This test is designed to assess the Adult Learners' English Language WF.

#### **Duration of the test**

The duration of the test is three hours.

Name:.....

Duration: Three hours

### The test questions

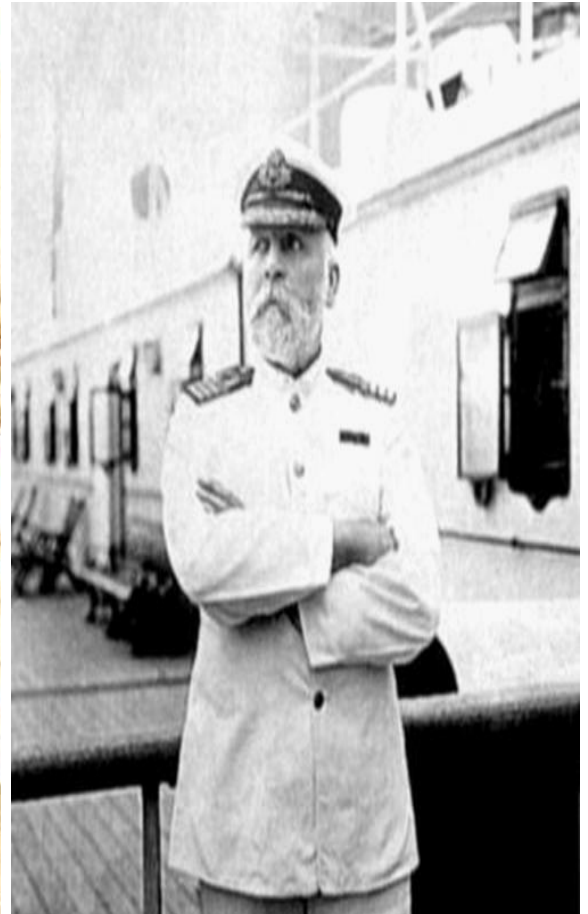
Write your responses, in a written form, on each of the following topics:

- 1- Introduce yourself. ( Reflection)
- 2- Where do you see yourself in the future?( Reflection)
- 3- Explain and give some interpretations, of what you would do to improve the quality of education, if you were the Minister of high Education (Interpretation and Visualization)





4- Visualize that you were one of Titanic's crews. Reflect your thoughts.(Interpretation and Visualization)



# THE DAY BOOK

500 SO. PEORIA ST

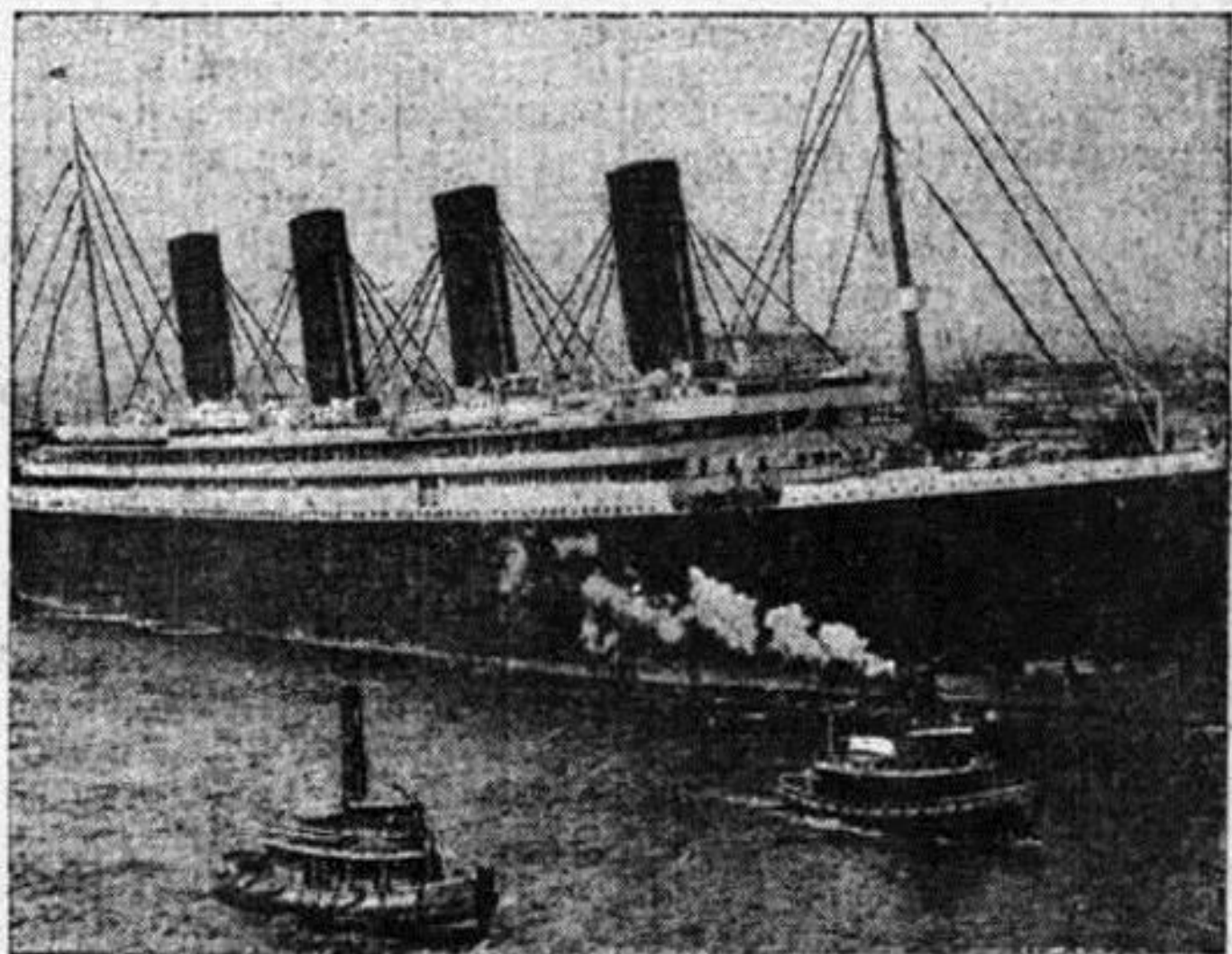
398

TEL. MONROE 353

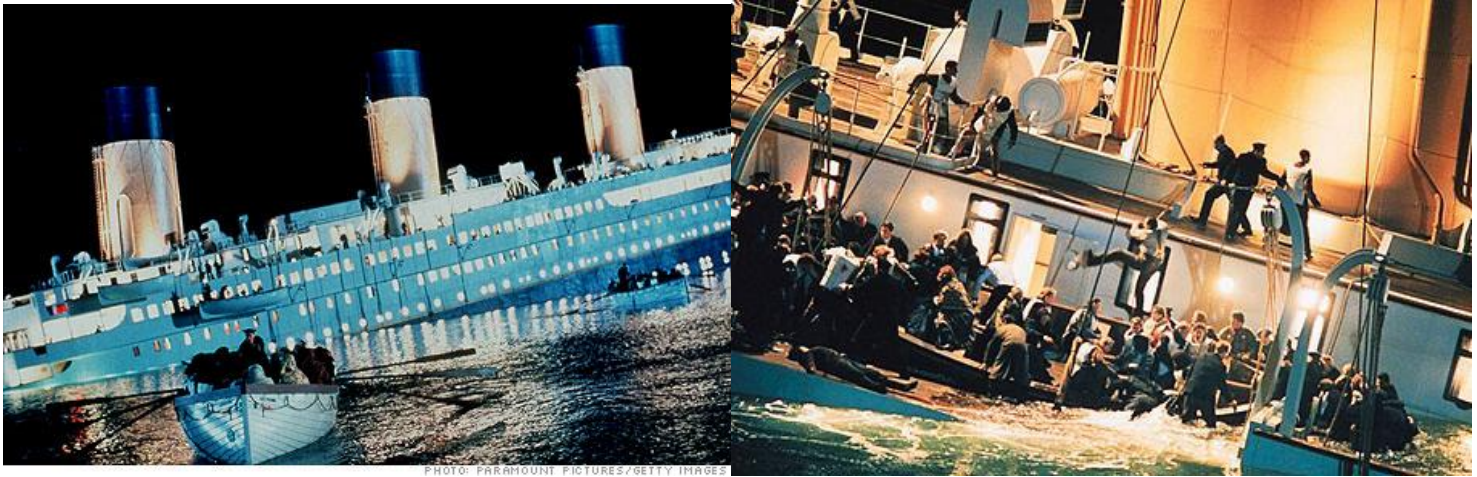
Vol. 1, No. 173 Chicago, Tuesday, April 16, 1912 One Cent

## 1,492 GO DOWN TO THEIR DEATH IN LOSS OF "WORLD'S GREATEST LINER"

*Women and Children Saved; Men Stay To Die; Pitiful  
Scenes as News Is Awaited; World's Most Noted  
Names Among "Missing."*



This late photograph is a good likeness of the steamer Titanic, largest of the world's great liners, as she appeared before her thrilling crash with a submerged iceberg at sea.



5- Watch the following video <https://www.youtube.com/watch?v=ABrjdyavqkI> and “visualize how the world would be in 2050.” (Interpretation and Visualization)

6- Watch a video entitled “An Interview with Sophia, An Artificial Super Intelligent Robot.” "<https://www.youtube.com/watch?v=fLvL7uqrMVC> " and then answer the following question “What do you think about artificial intelligence? Do you think it can replace or have major command over the humans’ world?” ( Fluency)

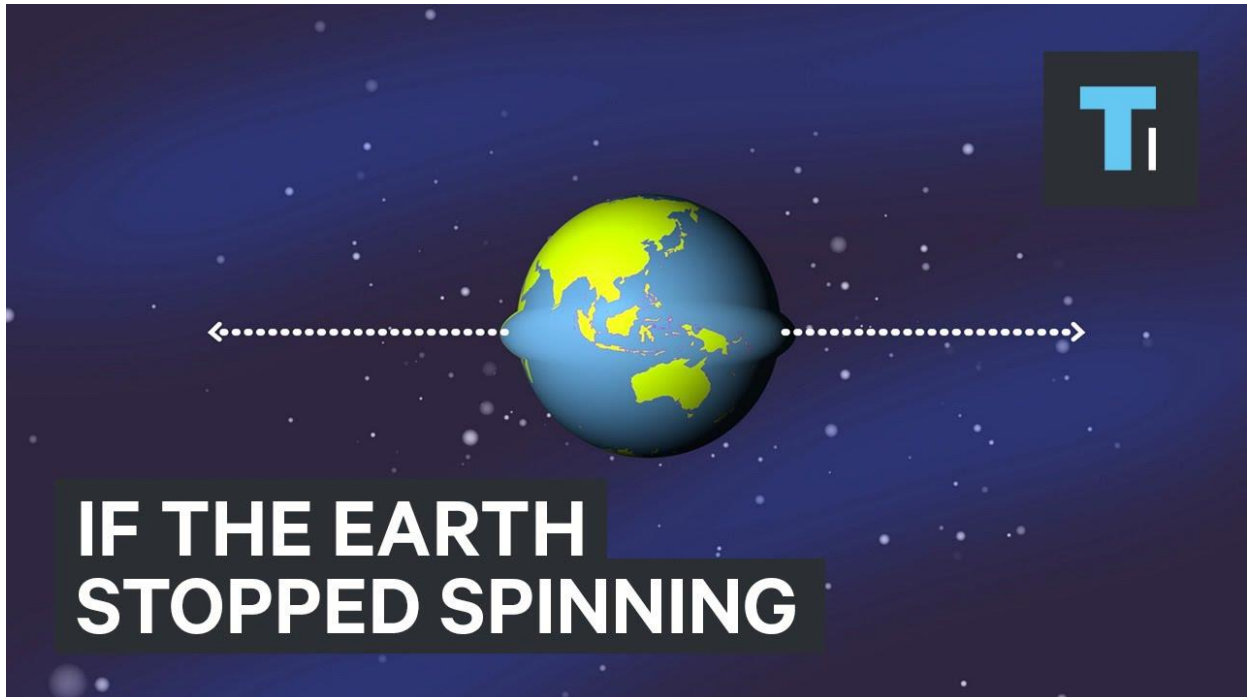
7- Write the first impression that comes up to your mind when you read the coming phrase:

- Happiness comes through satisfaction. ( Fluency)

8- Watch the following video

<https://www.youtube.com/watch?v=H8rWf1DklhM> Think about what would

happen if the earth stopped spinning.( Focus and Relevance)





9- Expand your ideas about the following picture :( Focus and Relevance)



## **Appendix (C)**

### **A rubric for Adult Learners' Writing Fluency**

### A rubric for Adult Learners' Writing Fluency

	<b>Emerging</b>	<b>Developing</b>	<b>Fluent</b>
<b>Reflection</b>	<p>* Demonstrating a little or no understanding of the subject matter.</p> <p>* Reflection is not thoughtfully written, however, it shows lapses, lacks development, and details; no support of the main idea.</p>	<p>Demonstrating a basic understanding of the scenario and subject matter.</p> <p>Reflection is showing a little progress in care and depth of self-reflection regarding the task at hand. Contains a general sense of direction. Addresses the topic.</p>	<p>Demonstrating a conscious and thoughtful understanding of the subject matter. Reflection is thoughtful, carefully written, and demonstrates significant depth of self-reflection on the topic. Clearly reflect ideas.</p>
<b>Focus and Relevance</b>	<p>Lacks focus. Copies unrelated words displayed in the classroom. Lack of relevance</p>	<p>Has, generally, one focused central idea, and uses relevant details/examples.</p> <p>Some sentences demonstrate an attempt to use credible / relevant sources to support appropriate ideas for the descriptive writing.</p>	<p>Has a clear focused central idea.</p> <p>Demonstrates effective use of high-quality, credible, relevant sources to develop appropriate descriptive ideas for writing. Clearly addresses the topic and provides expressive details/examples.</p>
<b>Visualizing and giving interpretation</b>	<p>Almost, no ability to visualize or interpret texts or pictures, copies of unrelated words and unclear focused central ideas</p>	<p>Some ideas are appropriately visualized and written, but need more interpretations.</p>	<p>A lot of texts, videos or pictures are deeply visualized. Ideas are deeply reflected.</p> <p>The learner gives deep interpretations, and produces reasonable responses of the displayed visuals.</p>



<p><b>Sentence Fluency</b></p>	<p>Attempts to write simple sentences. Some sentences are incomplete or awkward and repetitive.</p> <p>There is little or no variety in sentences. Some of the sentences are unclear.</p> <p>Words stand alone</p> <p>Writing is consistently difficult to follow; choppiness, run-ons, or other sentence problems abound</p> <p>There is not variation of sentence type /length</p> <p>There is no variety of sentence beginnings.</p>	<p>Sentences are coherent and complete.</p> <p>The writer uses some variety in sentences. Paper flows smoothly, but has some rough spots.</p> <p>Attempts some complex sentences.</p> <p>Not all sentences contain redundancy or repetition.</p> <p>Sections of writing have some flow.</p>	<p>The learner consistently uses a variety of sentences. Writing is natural and flows smoothly. Sentences begin with a variety of words.</p> <p>Sentence structure is correct and creative.</p> <p>Natural rhythm, coherence and flow. Sentences clarify the important idea.</p> <p>Writing is smooth, natural and easy to read.</p> <p>Sentence type and length are varied and effective</p> <p>Virtually, every sentence begins differently, adding interest to the text.</p>
<p><b>Mechanics</b></p>	<p>Punctuation, capitalization and grammar are missing.</p> <p>Meanings are not clear; careful word by word. The text needs much editing.</p> <p>Many familiar words are misspelled/spelled phonetically.</p>	<p>Punctuation, capitalization and grammar are usually present.</p> <p>Many familiar words are correctly spelled; unfamiliar words are generally spelled.</p> <p>Phonetic errors that are present, and generally do not affect the clarity of the text. The text needs Some editing.</p>	<p>Punctuation, capitalization and grammar are correct.</p> <p>Familiar and unfamiliar words are correctly spelled. Slips do not affect the clarity or effectiveness of the text. The text is perfectly written.</p>

## **Appendix(D)**

### **Visual Thinking Components**

## Visual Thinking Components

<b>Visual Thinking Components</b>	<b>Description</b>
Posing questions	Posing questions is one of the main components of VT. Learners have to answer three main questions: What is going on in this picture? What do you see that makes you say that? What further is there to see?
Interpretation	Interpreting through visual media requires practice and time. Receiving visual interpretations depends on visual sharpness; conveying them depends on the passage, and they only become relevant regarding the visual narration ability of the learner.
Connection with prior knowledge	VT and prior knowledge are two essential keys that connect together to support the learning process. High connection learning gives learners the opportunity to link their prior knowledge to the topics, and competencies addressed in the classroom.

Visualization	Visualization has been recognized as one of the most effective contexts for accelerating human thinking and learning. Visualization is the ability, the process and the product of creation, interpretation, use of and reflection upon pictures, images, diagrams, in our minds, on paper or with technological tools, with the purpose of depicting and communicating information, thinking about and developing previously unknown ideas and advancing understandings
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## **Appendix (E)**

### **The Study Program**

## **The study program**

### **Orientation session**

#### **Session (1)**

#### **(Orientation session)**

**Duration of the session: Two hours and thirty minutes.**

#### **Objectives:**

In this session, the instructor gives the participants a brief introduction about VT and what is meant by WF. The session tackles some main issues such as:

- Introduction on VT.
- Importance of VT.
- Steps of VT.
- Illustrating some main points such as :
  - How to generate deeper thinking in relation to what we see.
  - Enhancing clarity of thoughts about what we visualize.
  - Enhancing reflection.
  - Enhancing focus and relevance.
  - Reflecting key concepts and new ideas in relation to the learners' prior knowledge.

The instructor asks the participants to use the internet to read more about VT. The instructor provided the learners with some guiding websites that help to know more about VT as follows;

- <http://www.xplaner.com/visual-thinking-school/>
- <https://www.youtube.com/watch?v=rZikhQ5w5Ck>
- <https://www.youtube.com/watch?v=aVzcknOWpaE>
- <https://www.youtube.com/watch?v=GEbHXLHCNWw>
- <https://medium.com/think-clearly-world-tour/how-do-you-define-visual-thinking-what-is-it-what-is-it-not-b52021a94c14>

## **Session (2)**

### **(Orientation session)**

**Duration of the session: Two hours and thirty minutes.**

#### **Objectives:**

The session will continue tackling some main issues of the WF such as:

- 1- Training learners on generating ideas and elaborating thoughts through the application of VT.
- 2- Strengthening focus and relevance and having clear focused central ideas.
- 3- Enhancing learners' ability to reflect ideas and simplifying complex ideas.
- 4- Enhancing learners' ability to give rationale relations and logical sequence.
- 5- Helping learners organize their ideas using the x-mind program.



### **Session (3)**

**Duration of the session: Three hours and thirty minutes.**

#### **Activity (1)**

##### **Overview:**

In this activity, a video played over some cinemagoers about the expected dangers of using the cell phone while they are on the wheel.

##### **Objectives:**

##### **Learners will be able to:**

- Explain their view points and their expectations and assessing their ideas.
- Have clear focused and relevant ideas.
- Provide some evidence over the posed questions.
- Reflect their responses thoughtful in the form of short essays and answers.
- Deeply visualize and reflect ideas and give interpretations.
- Demonstrate a conscious and thoughtful understanding of the subject matter.
- Demonstrate a significant depth of self-reflection on the topic.
- Clearly addresses the topic and provides expressive details/examples.

- Give thoughtful interpretations using a variety of sentences structures.
- Use a variety of sentences.
- Clarify the important ideas using correct sentence structure, natural rhythm, coherence and flow.

**Warm up: (30 m.)**

A. The instructor will consolidate the Title of Film before the learners watch it and pose some questions to develop their visual thinking.

**B. Title of Film:** Driving and the cell phone

**Then, the instructor will pose more questions such as:**

- 1- What do you think you will see in this motion picture?
- 2- List Three concepts or ideas you might expect to see based on the title of the film.
- 3- List some characters you might expect to see based on the title of the film.

Concepts/Ideas	People
1-	1-
2-	2-
3-	3-

**Procedures: (90 m.)**

1- The video is displayed using the data show. The link of the video is

<https://www.youtube.com/watch?v=5Gtio4V1L3o>

2- Learners discuss answers to the following questions:

**Step 2. Viewing**

A. Type of motion picture (check all appropriate answers):

- |   |   |
|---|---|
| <input type="checkbox"/> Theatrical short subject | <input type="checkbox"/> Animated Cartoon |
| <input type="checkbox"/> Training film            | <input type="checkbox"/> Documentary Film |
| <input type="checkbox"/> Combat film              | <input type="checkbox"/> Newsreel         |
| <input type="checkbox"/> Other                    | <input type="checkbox"/> Propaganda Film  |

B. Physical qualities of the motion picture (check where applicable):

- |   |  |
|---|--|
| <input type="checkbox"/> Live action      | <input type="checkbox"/> Music           |
| <input type="checkbox"/> Background noise | <input type="checkbox"/> Narration       |
| <input type="checkbox"/> Animation        | <input type="checkbox"/> Special effects |
| <input type="checkbox"/> Dramatizations   | <input type="checkbox"/> Color           |

C. Note how camera angles, lighting, music, narration, and/or editing contribute to creating an atmosphere in this film. What is the mood or tone of the film?

**Step 3. Post activity (60m.)**

What is the central message(s) of this motion picture?

.....  
.....

b- Consider the effectiveness of the film in communicating its message. As a tool of communication, what are its strengths and weaknesses?

.....  
.....  
.....

List two things that you noticed in the video:

1. ....
2. ....

c- How do you think the filmmakers wanted the audience to respond?

.....  
.....  
.....

d- Does this film appeal to the viewer's reason or emotion? How does it make you feel?

.....  
.....  
.....

e- Write a question to the filmmaker that is left unanswered by the motion picture.

.....  
.....

## Session (4)

**Duration of the session: Three hours and thirty minutes.**

### Activity (2)

#### Overview:

In this activity, the instructor displays a video entitled “What if we lived on the moon?” and asks them to read an article tackling the same discussed topic.

#### Objectives

##### Learners should be able to:

- Brainstorm individually.
- Explain their thoughts about the weather, gravity, breathing, eating, etc.....
- Provide some evidence over the posed thoughts.
- Notice the details displayed in the video and in the article.
- Elaborate their points of view and write their responses in the form of essay and answers.
- Have a thoughtful reflection and clear, focused and relevant ideas.
- Give deep interpretations, and produce reasonable responses of the displayed visuals.
- Use a graphic organizer such x-mind program.
- Peer edit.
- Have group discussions and observations
- Reflect their responses in the form of short essays and answers.

## Warm up

**The instructor shows the title:** "Living in a different place" to urge their visual thinking.

- A- The instructor explains some difficult phrases that the learners may find.
- B- The instructor asks some questions such as " What do you think the topic is about? "What do you think you will see?"
- C- The instructor will preview some multiple choice questions to help learners find alternatives.

### **Procedures:**

- 1- The instructor displays a video tackling the idea of living on the moon.  
The video's link is <https://www.youtube.com/watch?v=rXB6mxPepjM>
- 2- The instructor asks the learners to think of the ideas and visualize it.
- 3- The instructor asks the learners to read the provided article tackling the same discussed topic. The article's link is  
<https://science.howstuffworks.com/what-if-moon-colony.htm>
- 4- The instructor asks the learners to have pair and group discussions and reflect their responses in a graphic organizer.
- 5- The instructor asks the learners to discuss concepts in groups and share their ideas, experience, emotions, and memories.

## Session (5)

**Duration of the session: Three hours.**

### Activity (3)

#### Photo Analysis Worksheet

**Overview:** This activity helps the learners to visualize, reflect and generate ideas out of a picture of a man walking a dog.

#### Objectives

#### Learners will be able to:

- Explain their thoughts through analysing the components of the picture.
- Provide some evidence over the posed thoughts.
- Learn how to divide the photo into quadrants and study each section to see which details become visible.
- Answer the questions and write their responses.
- Give deep interpretations, and produce reasonable responses of the displayed visuals.
- Jot down their thoughts that reflect flows and smooth of ideas.
- Give peer edit.
- Infer and interpret ideas.

#### Warm up



**The instructor displays the title:** "50 years ago" to arouse their visual thinking through insightful thinking of events and finding alternative possibilities that did not take place.

A- The instructor explains some difficult phrases to enrich the learners' vocabulary.

b- The instructor asks some questions such as" What do you think the picture is about? "What do you think you will see?"

c- The instructor asks the learners to reflect their responses.

**Procedures:**

- The instructor previews a picture and asks the learners to look at the picture silently for a minute and think about what they visualize and ask the learners some questions to arouse their VT "What's going on in the picture?" In relation to their prior knowledge.



- The instructor will discuss in groups, "What do you see in the picture?"
- The instructor will ask the learners to divide the photo into quadrants and study each section to see what new details become visible.
- When a learner offers an analytical statement, the instructor asks for more information. "You said the picture looks old. What makes you say that?" to elicit a wide range of answers.
- The learners justify their answers by providing evidence from the picture. They may say, "It's in black and white, and the cars in the back all look like they were made a long Duration of the study ago."
- Next the instructor asks the learners to share various opinions and provide justification. One learner may say, "The man on the bike is wearing a suit" The

instructor then asks, "Does everyone agree? Is that why this man is riding his bike in a suit?"

- The discussion goes on until learners share all they can about the picture.
- The instructor summarizes and interferences for further clarification of ideas.

What the learners said. "So, after looking at this picture we think that, maybe relatives — who lived a long Duration of the study ago. We can tell this because of what they are wearing and because the picture is black and white."

**Post activity:**

- The instructor asks the learners to reflect a few sentences about what they discovered from different perspectives and the learners demonstrate a significant depth of self-reflection.

## Session (6)

**Duration of the session: Three hours and thirty minutes.**

### Activity (4)

**Overview:** In this activity, the instructor displays a picture of a boy and a woman shoplifting goods from the supermarket.

### Objectives

#### Learners will be able to:

- Explain their thoughts through analysing the components of the picture.
- Provide some evidence over the posed thoughts.
- Learn how to divide viewed items into quadrants and study each section to see what new details become visible and differently reviewed.
- Demonstrate a significant depth of self-reflection on the topic.
- Clearly address the topic and provide expressive details/examples.
- Give deep interpretations, and produce reasonable responses of the displayed visuals.
- Use a variety of sentences.
  - Infer and interpret ideas.
  - Have group discussions and observations.
  - Argue the evidence.
  - Learn to make connections with their prior knowledge.

## **Warm up**

**The instructor shows the title:** "Needy" to arouse their visual thinking.

- a- The instructor explains some difficult phrases to enrich their vocabulary.
- b- The instructor asks some questions to list, clarify, analyse, and interpret.
- c- The instructor asks the learners to reflect their responses.

### **Procedures:**

- The instructor previews two pictures and asks the learners to look at the pictures silently for a minute and think about what they see. What's going on in the picture?", and " What makes you say that?"



 alamy stock photo

E5DYW8  
www.alamy.com

- The instructor asks the learners to divide the photos into quadrants and study each section to see how new details become visible.
- The instructor asks the learners to organize their thoughts and list people, objects, and activities in the photograph into the following schedule

<u>People</u>	<u>Objects</u>	<u>Activities</u>

**The instructor poses some questions:**

**Step 2. Inference**

Based on what you have observed above, list three things you might infer from

this photograph.

---

---

---

**Post activity**

**The instructor poses some questions :**

**Step 3. Questions**

What questions does this photograph raise in your mind?

- ---

---

Where could you find answers to the learners?

- ---



## Session (7)

**Duration of the session: Three hours and thirty minutes.**

### Activity (5)

**Overview:** In this activity, the instructor displays five pictures of some people and gets the learners involved in a controversial story.

### Objectives

#### Learners should be able to:

- Explain their thoughts about the controversial story through the analysis of the viewed visuals.
- Provide some evidence over the posed thoughts.
- Reflect on their thoughts.
- Use x-mind program and photo story 3.
- Formulate their own individual stories.
- Provide some evidence over the posed questions.
- Explain their view points, their expectations, and assess their ideas.
- Have clear focused ideas.
- Infer ideas
- Have group discussions and observations
- Argue the evidence
- Learn to make connections with their prior knowledge
- Tackle discussed topic from different aspects

## **Warm up**

- **The instructor shows the title:** "Fatal Disease" to arouse their visual thinking.
- The instructor discusses and elicits some difficult phrases which contribute in facilitating the discussion.
- The instructor asks some questions such as " What do you think the story is about? "What do you think will happen next? "What makes you say that?"

## **Procedures:**

- The instructor presents a picture of four patients, a woman who has an infant, repentant drug dealer, scientist, a man who might be sentenced to death, and their therapist. These patients are suffering from a deadly disease which they need an urgent surgery. The doctor is going to do an only one operation.
- The instructor tells the learners that they have the opportunity to choose one of those patients to have the operation.
- The instructor asks the learners to look at the pictures silently for a minute and think about what you see. What's going on in the picture?""What makes you say that?"



1



## **Post activity**

The instructor asks the learners to elaborate their points of view.

Write your own story using x-mind and photo story 3

## Session (8)

**Duration of the session: Three hours.**

### Activity (6)

**Overview:** In this activity, the instructor displays some pictures of criminals and gets the learners involved in a controversial discussion.

### Objective

#### Learners should be able to

- Explain their thoughts about witness game through analysis.
- Provide some evidence over the posed thoughts.
- Write their responses in an essay form .
  - Give deep interpretations, and produce reasonable responses of the displayed visuals.
  - Use a variety of sentences.
  - Deeply visualize and reflect ideas.

### Warm up

- **The instructor shows the title:** "The witness" to arouse their visual thinking.

d- The instructor explains some difficult phrases which contribute in facilitating the discussion.

e- The instructor asks some questions such as" What do you think the pictures are about? "What characters do you think exist in the pictures?" "What makes you say that?" and if you were there what would you do?

**Procedures:**

1- The instructor displays a series of 5 pictures of criminals, which the learners can be easily describe the criminals' physical appearance, (for example: 4 men with beards or moustaches of differing ages). Divide class into pairs. Learner A is a witness and B is a policeman.

2- The instructor displays all Learner A's one of the pictures (Learner B must not see it).

3- Learner B must ask the witness to describe the person he saw. Learner B can ask questions for details: hair, age, clothes, height, and weight. Learner B should take notes.

4- The instructor gives the Policemen (learner B) the line-up of 4 people. Which one did the witness describe?



**The post activity:**

- The instructor asks the learners to write a similar incident that they experienced and send a letter to a police station giving a description of a criminal.



## Session (9)

### Activity (7)

**Duration of the session: Three hours.**

**Overview:** In this activity, the instructor displays a picture of a man trying not to drown in some kind of sewer.

### Objectives

#### Learners should be able to

- Explain their thoughts about a mysterious picture through analysis, prediction and reflection of their ideas.
- Provide some evidence over the posed thoughts.
- Learn how to think behind the text.
- Clarify the important ideas using correct sentence structure, natural rhythm, coherence and flow.
- .Clearly address the topic and provide expressive details/examples.
- Give deep interpretations, and produce reasonable responses of the displayed visuals.
- Reflect their responses in the form of short essays and answers.

### Warm up

- **The** instructor shows the title: "I want to breathe" to arouse their visual thinking.

- The instructor explains some difficult phrases which contribute in facilitating the discussion.

**Procedures:**

- a- The instructor asks some questions such as " *What do you think the pictures are about?*"
- b- The instructor Summarizes the learners' responses using conditional language ("*Ali thinks this could be...*") to keeps the conversation opens to other interpretations by other learners.
- c- The instructor asks the second question "*What do you see that makes you say that?*"
- d- The instructor encourages learners to arouse their statements with things they notice or visualize in the picture.
- e- The instructor asks the third question "*What more can we find?!*" To expand their responses and answers.



**The post activity:**

- The instructor asks the learners to visualize that they are in a dilemma. *What is it?*

*How to find solutions and what are they? And, who could help them?*

## Session (10)

**Duration of the session: Three hours.**

### Activity (8)

**Overview:** In this activity, the instructor displays a picture of a man doing some acrobat above some buildings' ruins.

### Objectives

#### Learners should be able to

- Explain their view points and their expectations and assessing their ideas.
- Have clear focused ideas.
- Provide some evidence over the posed questions.
- Reflect their responses in the form of short essays and answers.
- Deeply visualize and reflect ideas and give interpretations.
- Demonstrate a conscious and thoughtful understanding of the subject matter.
- Demonstrate a significant depth of self-reflection on the topic.
- Give deep interpretations, and produce reasonable responses of the displayed visuals through a graphic organizer program.

### Warm up

- The **instructor shows the title:** "The acrobatic sport" to arouse their visual thinking.

- The instructor explains some difficult phrases which contribute in facilitating the discussion.

**Procedures:**

- a- The instructor asks some questions such as " What do you think the picture is about?"
- b- The instructor Summarizes the learners' responses using conditional language ("Ali thinks this could be...") to keeps the conversation open to other interpretations by other learners.
- c- The instructor asks the second question "*What do you see that makes you say that?*"
- d- The instructor encourages learners to arouse their statements with things they notice or visualize in the picture.
- e- The instructor asks the third question "*What more can we find?*"to expand their responses and answers.



**The post activity:**

In an essay form, describe people's feeling that experienced living in civil wars.

## **Appendix (F)**

### **The Participants' Satisfaction Questionnaires**

## Participant Feedback Questionnaire

**DIRECTIONS:**

The questionnaire used the questions in this tool to measure the participants' satisfaction with the program. It is recommended to complete the whole questionnaire.

	<b>Very satisfied</b>	<b>Somehow satisfied</b>	<b>unsatisfied</b>	
1- The program's application and activities met your expectations.				
2- What is your impression about the effectiveness of using VT on developing the writing fluency?				
3- What do you think of the applied activities?				
4- What do you think of the collaborative learning techniques?				
5- Are you satisfied with your writing fluency progress?				
6- How much of the training was				
	<b>some</b>	<b>All</b>	<b>none</b>	
-New				
-Review				
-Not relevant				
	<b>Strongly Disagree</b>	<b>Disagree</b>	<b>Agree</b>	<b>Strongly Agree</b>
7- The program gave me the training and assistance I needed to develop the writing fluency.				
8- I would recommend this program to others.				
6- The program's instructor was helpful and supportive.				



Q 10- What are your suggestions to develop this program?

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Q 11- Which topic in the program did you find most useful?

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---

Q 12- Which topic in the program did you find least useful?

---

Q 13 To what extent do you find the training helpful?

---

Q 14 Did you benefit from applying VT?

---

Q 15 How did your writing fluency change throughout the program?

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## **Appendix (G)**

### **The Pilot Study Writing Test**

## A Writing Test

**Name:** ..... **Duration :** Three hours Note( Duration could be extended)

**Write on all of the following topics in detail: If you need extra answer sheets, you could ask for them.**

- 1- A book you have read recently. (**Reflection**)
- 2- A hard issue you have experienced. (**Focus and relevance**)
- 3- If you were a teacher, what subject, class, and grade would you teach?  
(**Sentence fluency**)
- 4- Would you rather be on stage or in the audience? Why? (**Visualizing and giving interpretations**)
- 5- What is the first thing people notice about you? (**Reflection**)
- 6- If you could have an exotic pet, what would you choose? Why? **Visualizing and giving interpretations**

**Wish you all best of luck,,,,,**

## **Summary in Arabic**



جامعة عين شمس

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قسم المناهج وطرق التدريس

(اللغة الإنجليزية)

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بحث مقدم

للحصول علي درجة الماجستير في التربية  
قسم المناهج وطرق التدريس (اللغة الإنجليزية)

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أستاذ المناهج وطرق تدريس- اللغة الإنجليزية

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2018

**عنوان البحث :** "فاعلية التفكير البصري في تنمية الطلاقة اللغوية للمتعلمين البالغين للغة الانجليزية".

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**اشراف :** أ.د. اسماء غانم غيث . استاذ المناهج و طرق التدريس كلية التربية، جامعة عين شمس .

**د. دينا سيد نصر مدرس المناهج و طرق التدريس-لغة انجليزية كلية التربية جامعة عين شمس**

### **مستخلص البحث**

هدفت الدراسة الي قياس فاعلية التفكير البصري في تنمية الطلاقة اللغوية للمتعلمين البالغين للغة الانجليزية. بدأت هذه الدراسة بمراجعة الأدبيات والدراسات السابقة المتعلقة بالتفكير البصري ، وقدرة الكتابة وطلاقة الكتابة. و قد قام الباحث بتصميم البرنامج البحثي ، وأدوات قياس تقدم المتدربين بما في ذلك مكونات طلاقة الكتابة ، في الاختبار القبلي و البعدي، ومعايير التقييم ، واستبيان المشاركين. وكان المشاركون ١٤ من المتعلمين الكبار (ن = ١٤) ، و كانت اللغة العربية لغتهم الاولى. وقد التحق بالمستوي فوق المتوسطفي معهد التدريب الملحق بالشركة المصرية للاتصالات. وقد تلقوا دورة مكثفة في اللغة الإنجليزية لمدة خمسة أسابيع ، بمعدل محاضرتين في الأسبوع ، لمدة خمسة أسابيع ، والتي كان الباحث مطالباً فيها بتعزيز طلاقة الكتابة لدى المتعلمين حيث كان الباحث هو المدرب. تم تحليل نتائج المتدربين في الاختبار القبلي وبعد الاختبار الإحصائي باستخدام معامل اختبار T وتأثير الحجم. بالإضافة إلى ذلك تم إجراء تحليل كيفية لتقدم المتدربين وتحليله. وكشف التحليل الكمي و الكيفي عن مدى فعالية استخدام التفكير البصري في تطوير طلاقة اللغة الإنجليزية لدى المتعلمين الكبار ، وتحديدًا طلاقة الكتابة باللغة الإنجليزية لدى متعلمي الكبار.



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