

# The Effect of Using the Six Thinking Hats Method on the Development of EFL Female Eleventh- Grade Students' Reading Comprehension Skills in Petra Directorate of Education

Asma'a Al-salameen\* Ministry of Education. Jordan  
Headmistress: Ministry of Education. Jordan , Petra Directorate of Education, PO box 71810,Wadi Mous

Prof. Mahmoud Sulaiman Bani Abdelrahman  
Prof@Al-Hussien Bin Talal University.Ma'an. Jordan  
E-mail of the corresponding author: \*asmaasalameen10@gmail.com

## Abstract

The study aimed to explore the impact of using the six hats method on reading comprehension skills of female EFL eleventh-grade students in Petra Directorate of Education during the academic year 2022/2023. The study's goal aimed to assess the influence of a teaching technique based on six thinking hats on the development of English language reading comprehension compared to a conventional method. The research was guided by the books of Dr. Edward de Bono, who coined the phrase "lateral thinking," produced many books on thinking, including Six Thinking Hats, and pushed for teaching thinking as a subject in schools. The quasi-experimental design was used to achieve the above objective. The study sample consisted of (54) female eleventh grade students from Wadi Mousa Secondary School for Girls, who were selected purposefully and assigned randomly to two groups: an experimental group of (27) students and a control group of (27) students. To achieve the objectives of the study, all of the text topics were chosen from the eleventh grade textbook for the first semester, the instrument of the study was designed according to the characteristics of the six thinking hats, and then it was assessed for validity and reliability, to guarantee the equivalence of the two groups, the researcher administrated a writing ability pre-test, and then the experimental group was taught using the six thinking hats, whereas the control group was taught according to the conventional method. Data were analyzed using descriptive statistics and One Way ANOVA. The findings of the study revealed statistically significant differences at ( $\alpha \leq 0.05$ ) between students' mean scores in reading comprehension as a result of using the six thinking hats method compared to the conventional method and in favor of the experimental group, which indicates that the six thinking hats method was effective. Based on the findings, the study recommends that supervisors should encourage teachers to use the six thinking hats method to help them produce successful questions based on good question specifications and write and create models that simulate Tawjihi exams.

**Keywords:**The Six Thinking Hats Method, Reading comprehension, Eleventh Grade, Conventional Method

**DOI:** 10.7176/JEP/14-12-03

**Publication date:** April 30<sup>th</sup> 2023

## 1. Background of the Study

Language is a powerful tool for communicating with others through conveying ideas and goals. Learning a language, particularly English, the most widely spoken language in the world, is recognized as a foreign language in Jordan and one of the most important foreign languages that students should learn in school (Rabiah, 2018). One of the most significant advantages of learning EFL is that it increases students' cognitive capacities. Furthermore, learning a second language promotes students' comprehension and engagement with people from various countries, which may make someone feel more confident, which has an impact on the student's advancement in all areas. According to studies, learning EFL or conversing in a second language keeps your brain busy, learning a second language will help you keep your brain healthy and active at any age (Langan, 2008).

According to Chawwang (2008), teaching EFL requires the ability to read in order to increase knowledge and comprehension, and extend vocabulary, reading is so good at easing tension and stimulating the mind, it is difficult to fathom life without it.

The ultimate goal of reading instruction is to develop the ability to cognitively understand printed words by combining new and prior knowledge (adding meaning to what we read), many students struggle with reading comprehension, which can have a significant impact on overall performance, understanding the meaning of the text is more important than exactly reading words on a page. When teachers ask students about the information they've read, one of the most typical challenges is identifying the main theme or distinguishing the important themes. Also, students are unable to respond to questions that need greater thought and a thorough comprehension of the materials. Furthermore, some students struggle with how to organize their thoughts in response to various reading comprehension challenges. Secondary students who struggle with reading comprehension may struggle to understand the readings assigned as part of their EFL curriculum, delaying or halting their reading comprehension

growth. As a result, researchers are interested in the obstacles that students have with reading comprehension, as well as the solutions that assist students in learning and overcoming these difficulties.

According to Gilakjani and Sabouri(2016), reading may be instructive, engaging, and beneficial, this could be because effective teachers rely on a strong training foundation as well as demonstrating a number of thinking modes to help students enhance their reading comprehension abilities.

Six hats in white, yellow, red, blue, green, and black are used to encourage people to look at the subject from various perspectives. The white hat denotes certainty and incontrovertible information, but the yellow hat is viewed as an optimistic hat that focuses on all of the issue's merits and potential. On the other hand, the red hat is an emotional headgear that reflects all emotions, intuition, and enthusiasm. The blue hat indicates the decision to make sound judgments; the green hat represents ingenuity, creativity, and energy. Finally, the black hat signifies the depressing hat (De Bono, 1992).

The six thinking hats method was chosen by the researcher to teach the English curriculum (reading texts) with a focus on reading comprehension, the researcher accomplished this by training a teacher who will be essential in putting the method into practice, When teaching reading comprehension, the most important thing for teachers to remember is to ask students a variety of questions, from easy to difficult, while taking into account the students' levels, the topic of the text, and the students' thinking styles.

## **2. Statement of the Problem**

Based on the researcher's 18-year experience teaching English as a foreign language at the secondary level and while correcting secondary certificate exams in the general examination, it was discovered that students' reading comprehension skill (reading comprehension part) scores were significantly lower than their scores in the other parts of the exam. Furthermore, according to Bloom's Taxonomy Revised, some students may not grasp how to organize their thoughts in order to answer various types of reading questions, which often begin at lower cognitive levels (remembering and understanding) and move to higher cognitive levels. Many students say that understanding a text is tough, and they encounter numerous challenges, such as guessing the meaning, determining the major idea of the text, evaluating the text, and determining the main idea of the text.

According to studies on students' reading comprehension abilities, teachers use a variety of instructional techniques to assist students in improving their reading comprehension abilities, comprehending the meaning of the texts, and practicing various thinking techniques to thoroughly comprehend the text, which enables students to discover reasons and conclusions and assess facts and assertions (Thompson, 2009).

As a creative teaching method, the researcher chose Edward de Bono's six thinking hats method, thinking about numerous issues at once, according to Edward De Bono, makes it harder for people to focus and reflect. As a result, he suggests the "six thinking hats" technique, which is a mode of thinking that guides someone along a specific road at a specific time (De Bono, 1995).

## **3. The Objectives of the Study**

The purpose of this investigation was to see how the six hats approach affected the reading comprehension of female EFL eleventh-grade students in the Petra Directorate of Education.

The following objectives drove this study:

This study investigated the improvement of reading comprehension in female EFL students in the eleventh grade at the Petra Directorate of Education using the six hats approach.

To determine the extent to which the six thinking hats method influences the development of reading comprehension skills.

## **4. Questions of the Study**

To achieve the main aim of this study, the following questions were addressed:

- Is there an effect of using the Six Hats Method on the development of female EFL eleventh- grade students' reading comprehension and critical thinking skills in Petra Directorate of education?
- Are there any statistically significant differences between the mean scores of the control group and experimental group in reading comprehension skill attributed to the teaching method (the six thinking hats and conventional method)?

## **5. Significance of the Study**

This study is significant for a number of reasons because it might assist to:

- Help in the development of policies that ensure instructors are effective, relevant, and appropriate by providing them with training and emphasizing them in programs that qualify them to use this method now and in the future.
- To pave the way for further studies in the field of TEFL and developing students' speaking, listening, reading and writing skills.

The six hats method may help Jordanian 11th grade students improve their reading comprehension skills. Traditional methods of teaching reading comprehensions are no longer effective because they concentrate too much emphasis on direct questions and clear responses while disregarding more creative that assist students develop profound reading abilities developed through English study.

## 6. Limitations of the Study

According to Mugenda and Mugenda (2003) a limitation is a part of study that may impact the result adversely but which the study has no influence over.

6.1 Spatial limits: The spatial limits of this study were the Wadi Mousa High School of the Directorate of Education in Petra.

6.2 Human Limitation: Only 56 students in the eleventh grade at Wadi Mousa High School in Petra's Directorate of Education were included in this study.

6.3 Time Limitation: The first semester of the school year (2022–2023) was used for this investigation.

6.4 Scientific Limits: The purpose of this study was to determine the impact of using the six hats approach on female EFL eleventh-grade students' reading comprehension abilities.

## 7. Delimitations of the Study

Delimitations are lines drawn by the researcher to define the parameters of the study (Cohen, Manion and Morrison, 2007). The study only covered Wadi Mousa Secondary School students. Additionally, only one English teacher was trained to use the six thinking hats method in the study. The study's sole focus was on how the six thinking hats affected reading comprehension skills; the study also excluded all other English language skills.

### 7.1 Study Hypothesis

Ho1: There is no effect of using the Six Hats Method on the development of female EFL eleventh- grade students' reading comprehension and critical thinking skills in Petra Directorate of education.

Ho2: There are no statistically significant differences between the mean scores of the control group and experimental group in reading comprehension skill attributed to the teaching method (the six thinking hats and conventional method)

## 8. Operational Definition of Terms

8.1 The Six Thinking Hats method: is one way to promote thinking. It enables the thinker to address one concept at a time before switching to another (De Bono, 1999). There are six different ways or patterns to think: Red Hat offers an emotional viewpoint, Black Hat is unbiased, fact-based, and objective (covers negative aspects), Green Hat denotes creativity and fresh ideas, the Yellow Hat covers optimism, and the Blue Hat emphasizes structure and control (De Bono, 1987).

- White thinking hat: Students read to identify the information they already have known and the insights they have developed (De Bono, 1985).
- 2) Black thinking hat: Students read to analyze the obstacles, problems, and risks associated with a topic, spotting possible risks.
- 3) Yellow thinking hat: Students read to focus on the advantages, motivations, and ideals when reading for benefits in a concept.
- 4) Red hat thinking hat: Students read to examine a topic from the point of view of emotions, feelings, and intuitions.
- 5) Green thinking hat: Students read to investigate a variety of new ideas and profound opportunity in order to discover a creative idea that needs innovative, imaginative, and lateral thinking about a topic (De Bono, 2017).
- 6) Blue thinking hat: students read extensively, evaluate, and then organize their ideas to find solutions to issues or master the answers so they can regulate and manage their thinking.

8.2 Reading Comprehension: Reading comprehension, according to Kintsch (1998), is the process of extrapolating meaning from text rather than attempting to do it from particular words or sentences. For the purpose of this study, teachers use a variety of different question levels to gauge students' thinking, opinions, perspectives, and ideas. Six thinking hats can be used to help readers manage their problems while they read texts and assess their planning and performance. Additionally, it gives students a framework to look at a reading issue from a variety of angles, which aids in their understanding of what they have read.

8.3 Eleventh Grade: Students in the eleventh grade are in the scientific branch and are around seventeen years old, they are enrolled in the first secondary stage class at Wadi Mousa School for girls, during the academic year (2022/2023). They had spent eleven years studying English using the Action Pack book series in accordance with the standards specified by the Ministry of Education.

8.4 Conventional Method: in this method, the teacher emphasizes memorizing and asking direct questions and does not use the most up-to-date teaching techniques or methods while following to the suggested teaching

techniques in the teacher's guide when employing the direct instruction method with the control group.

## 9. Theoretical Framework

### 9.1 The Six Thinking Hats

The Six Thinking Hats method is one of the most important educational methods for improving and enhancing thinking, encouraging teachers and students to be more active and effective. The main goal of this method is to enable students to deal with only one pattern of thinking at a time by selecting the color of each hat in a way that matches the nature and quality of its thinking (Serrate, 2017). Each hat represents a different way of thinking.

#### 9.2 Six Hats, Six Colours

- White Thinking Hat: (Facts and Figures)

The white thinking hat requests information that is either known or required. "The facts" is a neutral thinking sign that depicts facts, information, and statistical data, as well as highlighting missing information and where it might be obtained (Hahn, 2022).

Gonzalez (2001) stated that the white hat is concerned with questions like:

What information do learners have?

What information do learners need?

What information is missing?

- Yellow Thinking Hat (Benefits and Optimism)

The yellow thinking hat represents benefits and positive aspects; also the yellow colour symbolizes the brightness of the sun and optimism. When the yellow thinking hat is in use, students make an effort to find the value, benefits, and good points about an idea or situation. The intent is to be optimistic and realistic. (Benefits, advantages, characteristics and say good points (Serrat, 2017).

According to the Lakshmi (2017) it is concerned with questions such as:

What value can you see?

How can we create this value?

What are the benefits?

- Black Thinking Hat: (Cautious and Careful)

The black thinking hat is the polar opposite of the yellow hat; it denotes sadness and negativity, and it discusses why something cannot be done (The point of pessimistic point of view). The black thinking cap is used to point out why a suggestion does not suit the facts; it must always be logical. It employs experience, logic, judgment, and caution to study the challenges and problems involved with a topic; it lays out the shortcomings of a concept. The black hat way of thinking is for being cautious (De Bono, 2000).

It is concerned with questions such as:

What's wrong with this?

What are the risks?

What are the difficulties?

- The Red Thinking Hat: (Emotions and Feelings)

The red thinking hat is a sensitive hat that symbolizes emotions, feelings hunches, and intuition. While wearing this hat, learners are allowed to express their feelings about the subject or to share their general mood and share fears, likes, dislikes, loves and hates; this hat does not require logical reasoning or justification, as feelings are almost always subjective rather than rational (Smith, 2022).

It is concerned with questions such as:

What are my feelings about this?

How do others feel about this?

What's my hunch about this?

- Green Thinking Hat: (Creativity and new Ideas)

The green thinking hat is the energy hat; it is concerned with fresh ideas and new ways of expressing viewpoints and the green color represents plants sprouting and new opportunities. The green thinking hat represents creativity, alternatives, proposals, what's new, provocations, and changes. It's perhaps the most difficult hat to wear; De Bono has devised a number of techniques to elicit fresh thoughts that may appear novel, and he authored an entire book about it called Lateral Thinking (De Bono, 1999).

The green hat was explained by Keefe (2022), It is interested in questions such as:

What ideas do we have?

What ideas have we got?

What if we change\_\_\_?

- Blue Thinking Hat: (Managing the Thinking)

The Blue Thinking Hat: represents the overall thinking process, the colour blue points to sky and sea often associated with depth and stability and symbolic of wisdom, intelligence, responsibility, management and control. A critical thinking use of the Blue Hat is to focus the discussion on a given topic or problem (Goldman, 2013).

According to Bodur (2018) blue hat is concerned with questions such as:

- What thinking has been done?
- What's our thinking goal?
- What is the next step to reach the goal?

**9.3 The summary of De Bono's Six Thinking Hats is below:**

|   |  |
|---|--|
| <b>White Hat Thinking:</b><br>Just the facts                    | The white hat calls for information known or needed. When you ask for white hat thinking you are asking what information is needed, what is available and how it can be obtained.  |
| <b>Yellow Hat Thinking:</b><br>Benefits. Pluses.                | The yellow hat explores the positives and probes for value and benefit. The yellow hat role is for discussing ONLY the positive view of problems and possibilities for solutions.  |
| <b>Black Hat Thinking:</b><br>Difficulties. Problems.           | The black hat is logical and critical judgment: why something may not work. Spot the difficulties and dangers. The black hat points out what cannot be done. The hope is that the black hat will prevent us from making mistakes.  |
| <b>Red Hat Thinking:</b><br>Feelings. Gut instinct. Intuition.  | The red hat signifies feelings, hunches and intuition. When using this hat people can express emotions and feelings and share fears, likes, dislikes, loves and hats. They don't need to justify their statements.   |
| <b>Green Hat Thinking:</b><br>Creativity. Ideas. Possibilities. | The green hat is an opportunity to express new concepts and new perceptions. People can generate alternative solutions or courses of action, put forward possible explanations or hypotheses, create new scenarios or future states, or generate possible designs.                           |
| <b>Blue Hat Thinking:</b><br>Managing the thinking.             | The blue hat deals with controlling the thinking process. The blue hat is sometimes 'given' to one person, who controls which hat will be 'worn', hence controlling the type of thinking being used. The blue hat comments on the thinking being used, asks for conclusions, decisions, etc. |

Fig. 1 provides an explanation and summary of De Bono's Six Thinking Hats usage and what does each colours indicate or symbolized for, Fig 1. Six Thinking Hats (Kruse, 2010:71).

**9.4 Six Thinking Hats in the Classroom**

The Six Thinking Hats Method is a teaching method that trains students to be good and adaptable thinkers, students learn about six different forms of thinking that they can apply to any topic or scenario, which are represented by different colored hats. The method can be utilized in group activities where each student takes on different thinking hat roles in the group, or teachers can ask students individually many different questions to choose the appropriate hat. This allows students to participate in group discussions from all perspectives. It is a wonderful way to ensure that each student has an opportunity to practice the group activity and explore other points of view (Shaun, 2021). Teachers can divide the using of six thinking hat into two parts: (Channell, 2022)

- Single use rule symbolizes that to a particular type of thinking usually in the course of a conversation or discussion, pre- reading questions.
- Sequence use rule says that hats can be used one after the other in a certain sequence. The sequence may be made up of two, three, four or more hats.
- De Bono (1999) mentioned some tips on using six thinking hats method in the class like:
- It will take time, If this is the first time teachers are introducing the Six Thinking Hats method to their students, allow at least one lecture (lesson) 45 minutes of class time; To explain what this method means, express the hats symbols, clarify the students' roles, and answer questions as they prepare to participate.
- NOTE: If the students are familiar with the Six Thinking Hats method (maybe teachers have introduced them before a previous time), teachers will not need to spend as much time in class explaining the hats, roles, and expectations. As soon as teachers remind them which hat they are wearing, then they will be ready to get to work.
- Decide on the topic, problem or activity for the class or groups:
- Decide on the topic, problem, or activity for the class or groups:
- Choosing a suitable topic, problem or activity will make full use of the six thinking hats. This allows students to reap the most benefit from the six thinking hats; teachers should choose an open-ended topic or problem, or comprehension reading, this will be ideal for using the six thinking hats to explore different perspectives. In contrast, teachers should avoid topics or problems with clearly defined answers, these types of topics rely on logical thinking, and not all thinking hats can be involved in solving it (Leicester, 2009).
- Monitor and facilitate the student's activity progress:
- Lastly, as the group or class activity is implemented, teachers should remember to monitor how the students are involved in the group or class activity. If there are some of the students are stuck, and not in



a discussion, teachers should help and facilitate the students' discussion, they try to facilitate just enough to get the students moving ahead with their discussion.

### **9.5 Reading Comprehension:**

Reading means the ability to analyze and interpret a variety of printed materials - books, articles, and documents. On the other hand, reading comprehension is the ability to read text, process it and understand its meaning (Harmer, 1998).

As reading teachers, we share the common aim of teaching students reading comprehension to become more active, strategic readers who professionally comprehend text. Of course, to prepare students to be successful readers, teachers need to use unique methods that help students to reading skills involve: identifying word meaning, drawing inferences, identifying Writer's technique, and finding answers to questions (Bojovic, 2010).

What kind of Reading Should Students do?

It depends on the student's levels ( if they are at a low level the texts should be simple and clear and from their interest, whereas, if they are in a high the texts should be 'authentic' and more varied so the teachers might want them to read magazine articles, letters, stories, menus, advertisement, report, play extracts, poems and so on.

Kinds of Reading:

There are four different styles or types of reading academic texts: skimming, scanning, Inferring, and in-depth reading (Harmer, 1998).

- Scanning: reading a text quickly to pick out specific information, this skill means that they do not have to read every word and line.
- Skimming: reading a text quickly to get a general idea of what it is about.
- Inferring: deciding how a writer feels about something from the way that they write rather than the words they use.
- Comprehension or In-depth reading: Reading for detail whether looking for detailed information or language.

### **9.6 Stages for Teaching Reading:**

These are the three stages that you should follow during a reading lesson.

- Pre-Reading Stage
- While-Reading Stage
- Post-Reading Stage

#### **9.6.1 Reading Lesson: Pre-Reading:**

Pre-reading activities are activities that help students think about what they know about a topic and predict what they will read or hear, (Predicting, word association, discussions and text surveys) (Campo, 2021).

According to Meredith (2013), the objective of pre-reading activities is to:

- Establish a purpose for reading
- Improve vocabulary so students can complete the reading task successfully
- Predict what they are going

Chall (1983) elaborated. Pre-reading exercises include the following:

- True or false: teacher reads a few statements about the text and asks students if they think those statements are true or false, teacher doesn't reveal the answers and lets them confirm if they were right or wrong when they are doing the reading.
- Videos: teacher finds a short video relating to the topic of the text, (around three minutes long). After students watch the video, the teacher asks some simple discussion questions, and then the teacher plays it again and then asks them to talk with a partner about what they saw.
- Discussion: teacher creates a discussion about the topic, s/he prepares some sentences about the topic, and Students read the sentences and express their opinions if they agree or disagree with them.

#### **9.6.2 Stages for Teaching Reading: While Reading:**

While-Reading Activities or during-reading activities: are activities that help students to focus on aspects of the text and to understand it better with more details, the number of while-reading activities that a teacher can do in the classroom depends on the creativity of the teacher.

- Here are some examples of while-reading activities: (Nuttall, 1996)
- Identify topic sentences and the main idea of paragraphs: Students should know that every paragraph usually includes a topic sentence that identifies the main idea of the paragraph.
- Skim a Text for specific Information: Skimming is the ability to locate the main idea within a text, using this reading strategy will help students to become proficient readers.
- Student-to-student conversation: This type of activity is one that promotes the integration of two more skills since you read the paragraph, you talk to a classmate and you listen to what he or she has to say.
- Scan a text for specific information: scanning is reading a text quickly in order to find specific information.

### 9.6.3 Stages for Teaching Reading: Post Reading:

Post-reading activities help students understand texts further, by critically analyzing what they have read, which are carried out after you have implemented successfully Pre-Reading Activities and While-Reading Activities, post or After Reading activities play a crucial role in reading lessons because they help students use newly learned words and promote the use of the language in creative ways.

According to Meredith (2013), the following are the best examples of post-reading activities:

- Areas of Interest: The teacher asks students to say which part of the text is the most important/interesting and which part is not interesting or important, to save time and all students allow voicing their opinions, the teacher and ask them to share their views about the reading with two or three classmates and then make a decision.
- Finding Related News: After students have finished reading, they can browse on the internet for a new related to something they found interesting from the reading.
- Prepare a Survey: Students can prepare a survey about the information they just read.

## 10. Review of Empirical Literature

There are many studies related to Using the Six Thinking Hats Method on the development of Reading Comprehension Skill Following are the empirical studies:

Majid & AL-Tarawneh (2015) carried out a study aimed to explore the effect of using the six thinking hats method on the development of EFL female eleventh grade students' writing skill in Al-Mazar directorate in Jordan, Also it aimed to investigate if there was an effect for using this method due to the student's level in English Language (high, intermediate and low). The study was used a quasi-experimental design. The sample of the study consisted of (50) female eleventh grade students from Mu'tah Secondary School, the sample was selected purposefully and assigned randomly into two groups experimental group of (24) students and a control group of (26) students. The tests (pre-post tests) were utilized to collect data. The findings of the study indicated that there were statistically significant differences in favor of the experimental group taught according to the six thinking hats .The study recommended the need to organize seminars and workshops to train Jordanian teachers on implementing the six thinking hats in teaching English language.

Tahrnun & Noviati (2019) conducted a study to examine the effectiveness of using six thinking hats in teaching English narrative text to eighth-grade students of PGRI Junior High School 9 of Palembang in Thailand. The objectives of the study were to investigate the teaching of reading narrative texts through the six thinking hats strategy that requires students to express their way of thinking about a topic. The study adopted the pre-experimental method with one group pretest-posttest design. The sample comprised (36) eighth-grade students who were chosen by cluster random sampling. The data were collected through the written test in form of multiple choices which was implemented in pre-test and post-test. The findings of the study indicated that the six thinking hats strategy was effective in teaching reading; researcher recommended that teachers should apply a strategy in teaching English. Hightower (2019) conducted a study investigating the effect of implementing Edward de Bono's Six Thinking Hats on improving reading comprehension skills for Students with Learning Disabilities (SLD) (Ph.D., Nova Southeastern University) in Florida. The study utilized an experimental design. The sample comprised Grade 9 and Grade 10 students enrolled in Intensive Reading classes at a Florida high school, who have taken the State of Florida to measure reading comprehension and failed the test, they were divided into two groups a control group and an experimental group. Data were collected using Lexile scores and criterion-referenced tests they were (24) questions per test. The study used a quasi-experimental design. The findings of this study showed that the Six Thinking Hats do not have a statistically significant difference in improving SLD students' reading comprehension skills. The study recommended using a larger sample size and Future studies should extend for the larger timeframe.

Ibraheem & Al-Shamrany (2020) carried out a study aimed at exploring the effect of using the six thinking hats strategy on the development of EFL female third-secondary students' reading comprehension skills in Saudi Arabia, The sample of this study comprised two groups the experimental group and the control group each group consisted of (22) students each were selected randomly from the population of the third secondary grade female students in Bisha governorate of Education, The students of both groups were exposed to the pre-posttest to collect data. The study utilized the quasi-experimental design. The findings revealed that the effect size of applying the six thinking hats strategy in teaching reading Comprehension skills was large. This indicates that the six thinking hats strategy is effective. The researcher recommended that the Ministry of Education should take into consideration developing the English language secondary curriculums in designing to include different types of thinking by using the six thinking hats strategy.

Ismail (2021) conducted a study investigating the effects of applying the six thinking hats strategy on developing English language speaking skills and attitudes towards it among online EFL General Diploma students at Cairo University, and the student's attitudes towards English language speaking skills The study adopted

purposive sampling techniques; the participants were one experimental group the sample of the study was comprised of (32) students. The study utilized analytical and the quasi-experimental design with one group pre-test and post-test design. Three main instruments were used for collecting data: speaking sub-skill checklist, speaking test, and an attitude scale. The results showed the positive impact of the Six Thinking Hats strategy on the development of English proficiency and attitudes towards those skills in EFL General Diploma Online students. The researcher recommended that the strategy should be an essential part of designing teachers' training programmes.

Ghounane & Rabahi (2021) conducted a study aimed to improve students' thinking skills and their academic writing skills, mainly in dissertation writing by using De Bono's six thinking hats, and it also discussed how teachers of academic writing and research methodology help EFL Master Students in writing their dissertations in Algeria by using six thinking hats. The researchers selected a non-random sample consisting of (39) first-year Master's EFL students at Saida University. The tests for the experiment were utilized to measure students' practices. The results revealed that students succeeded in using De Bono's approach to the six thinking hats in dissertation writing, mainly in writing the abstract and the general introduction. The result also indicated that the use of the six thinking hats technique provides mechanisms that can enhance the EFL student's writing skills mainly, in writing dissertations. The study recommended that teaching thinking skills should be a part of the curriculum in middle schools and teachers need to incorporate both thinking skills techniques, group work, problem-solving, and self-directed learning in their students' activities.

Elmongy (2022) conducted a study aimed at investigating the effect of using the six thinking hats strategy to develop secondary school students' writing skills in Egypt. The descriptive survey design was used. The sample of the study consisted of (60) male students; they were divided equally into two groups, the experimental group was taught through the six thinking hats strategy and the control group received regular instruction. The study used a quasi-experimental design. A writing skills checklist, writing skills pre-post test, and a rubric were used to collect data. The finding indicated that there were statistical, and significant differences between the mean scores of the experimental and control groups, in favor of the experimental group, this indicates that the participants' writing skills have been developed. The researcher recommended training English teachers on using the six thinking hats in learning through teaching and providing study climates to facilitate the applications of constructive practices in the classroom.

## 11. Design and Methodology

### 11.1 Study Design:

The researcher employed a quasi-experimental approach since it allows for the optimization of precision and the development of specific findings about a hypothesis statement. Finding the impact a factor or independent variable has on dependent variables is the aim. The purpose of this study is to determine the impact of an independent variable (the six thinking hats method) on the two dependent variables (comprehension reading skill) in the first semester of 2022/2023 when teaching English as a foreign language to female EFL eleventh-grade students in the Petra Directorate of Education. As a result, the quasi-experimental design gave the researcher the opportunity to test hypotheses or provide research-related insights in order to provide valid and reliable results and suggestions for the study.

### 11.2 Population of the Study:

The population of the current study comprised of all of the female students in the eleventh grade's scientific department. There are (133) female students attending five public schools, according to data received from the Petra Directorate of Education.

### 11.3 Sample of the Study:

Fifty-four ( $n = 54$ ) students in the scientific branch of the eleventh grade at Wadi Mousa High School in the Petra directorate of education were selected on purpose as a sample for this study from a large population of 133 ( $n = 133$ ) eleventh grade students, all of whom were female, during the first semester 2022/2023. The sample distribution in relation to the study variables is shown in table (1) below.

Table (1) Sample Distribution According to the Study Variables

| Study variable (method)  | Groups       | Students number |
|--------------------------|--------------|-----------------|
| Conventional method      | Control      | 27              |
| Six thinking hats method | Experimental | 27              |
| Total                    |              | 54              |

### 11.4 Selection of the Study Sample:

Purposive sampling was selected by the researcher. Given that students' characteristics were similar, this method seemed appropriate. Therefore, a condition for the sample is that it be more homogeneous. From a population of (54) students in the scientific branch (A, B) of the eleventh grade at Wadi Mousa High School in the Petra directorate of education, (27) students in the scientific branch (A) were chosen using a purposeful sampling technique.



### 11.5 Variables of the Study:

The method of instruction was the study's independent variable with two levels. The six thinking hats method and conventional method were used.

During the academic year of 2022–2023, the students were instructed using the two approaches for one semester. The reading comprehension skill was the dependent variables in this study. The goal of the study was to quantify the influence of the independent variable on the dependent variable. The link between independent and dependent variables is depicted in figure (2) below.

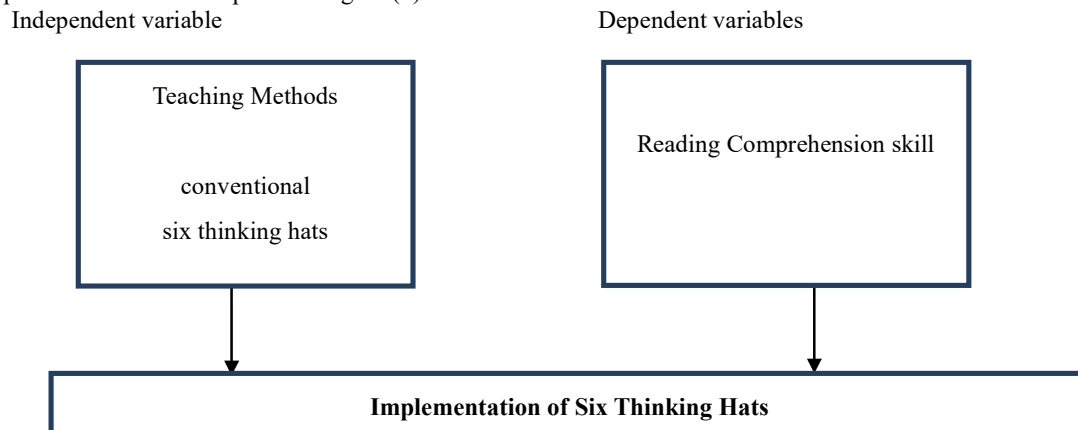


Fig2: Relationship between Independent and dependent variables

### 11.6 The instructional material:

Based on the General Guidelines and standards and General and Specific objectives for the English Language, Edwina Johnson's Action Pack 11 for Eleventh Grade English was published in 2014. The student's book Action Pack 11 is based on a properly graded language syllabus and includes six thematic modules—three for each semester—for Jordan's Basic and Secondary Stages, where this language is considered a foreign language. The texts for the first semester's reading comprehension skills were all selected in this study and a wide range of exciting topics are covered in the articles and texts.

### 11.7 Instrument of the Study:

The tools that the researcher uses to collect data from the sources chosen for the study are known as research instruments. Tests were performed to gather data because of the study's nature, to confirm that the two groups were equivalent, a pre-student reading comprehension and critical thinking skills test was given to each group. At the end of the experiment, the same tests were utilized to evaluate students' proficiency in the both skills.

#### 11.7.1 Tests:

To assess students' reading comprehension, tests were established; students were instructed to read book articles and texts from the eleventh grade to answer exam questions. Twelve questions based on two famous works were included in the reading comprehension skills test. The "reading comprehension exam" questions were developed in various question types and ranged in difficulty from easy to complex; they were designed according to the characteristics of the six thinking hats.

#### 11.7.2 Research Instrument:

Pre-test was designed by the researcher to ensure the equivalence of the two groups, and to know the actual level of students before starting the experiment, also the same test was used as post-tests to assess students' developments in reading comprehension skills.

### 11.8 Validity of the Instrument:

The researcher ensured that the test was in line with the researcher objectives, to ensure the face validity of the study examinations, twenty one professional experts from different university professors, supervisors, and teachers assessed them, their participation was required for ensuring content validity of the test questions, they were also asked to evaluate the test questions,

### 11.9 Reliability of the Instrument:

The test-retest technique was used to determine the test's reliability, This was done by conducting a pilot study in which a test was administered before data collecting from the main experimental samples began, fifteen students from a public school were chosen to participate in the pilot, the fifteen students who participated in the pilot study were excluded from the study's main sample; the pilot group retook the test two weeks later. With the use of Pearson's formula, the reliability coefficient of the test was calculated. It was found 0.88. Thus, the test could be described as being reliable.

### 11.10 Procedures of the Study:

- The researcher reviewed the pertinent literature, including theoretical and empirical works relating to the

- issue of the current study, after selecting the study's focus.
- The study's components were established when the researcher used past research to identify the study's goals, sample, hypotheses, and questions.
  - Test that is necessary to provide answers to the study's questions have been developed as tool instruments.
  - A jury panel presented the validity of the created tests, as a tool instrument (universities professors, supervisors and teachers).
  - The supervisor, teachers, and some of the jurors evaluated the tests the teacher's handbook and assessments tools forms by showing it to them.
  - The researcher acquired a letter of authorization from AL-Hussein University and the Petra Directorate of Education to facilitate and conduct the study at Wadi Mousa Secondary School.
  - To assess the tests' dependability, some participants who did not make up the sample piloted them.
  - One section was chosen at random to be the experimental group this group received instruction utilizing the six thinking hats method, while the control group taught using the conventional way.
  - The researcher built test questions based on the six thinking caps that were related to the chosen book.
  - To teach reading comprehension texts, the researcher trained the instructor in the six thinking hats technique. (In the handbook, the steps and the lesson plan for each text were mentioned.)
  - To determine the student equivalence between the two groups, two examinations were administered.
  - The researcher chose all of the texts and articles from Action Pack 11 (S.B) for the first semesters, which were taught to the students utilizing the six thinking hats technique.
  - The two groups administered post tests that were identical to the pretests after three months of using the approach with the experimental group.
  - The study's questions were addressed and the findings were examined after the study had been put to use, data had been collected, and data had been analyzed using the statistical package for social science (SPSS).
  - The researcher drew the main findings, conclusions for the study and recommendations for further studies.

## 12. Findings

The findings of the study, in light of its questions and discussions of the finding study, to investigate the effect of using six thinking hats method on the development of EFL female Eleventh- Grade students' reading comprehension skills in Petra Directorate of Education. Before carrying out the statistical analysis to answer the questions of the study, the researcher made sure of the equivalence of the two groups (control and experimental) to examine if the development in the students' reading ability will come as a result of using six thinking hats or not. The researcher carried out pre-tests for both groups and conducted the mean and standard deviation for their scores in these tests which was conducted in the first semester of the year 2022/2023. Table two shows the result of the t-test for independent samples on the pre-test.

Table No (2) The result of t-test for independent samples on the pre-test ( Means, Standard Deviation and t-test results of the Experimental and Control Groups on the (Pre) reading comprehension and critical thinking skills tests.

| Test                        | Group        | N  | Mean  | Std. Deviation | t    | Df | Sig. (2-tailed) |
|-----------------------------|--------------|----|-------|----------------|------|----|-----------------|
| reading comprehension skill | Experimental | 26 | 22.27 | 3.157          | .115 | 50 | .909            |
|                             | Control      | 26 | 22.15 | 4.037          |      |    |                 |
| critical thinking skills    | Experimental | 26 | 14.50 | 2.518          | .571 | 50 | .571            |
|                             | Control      | 26 | 14.12 | 2.338          |      |    |                 |

The results of Table 1 show that the differences in the mean scores of the study's control and experimental groups on the pre-test in reading comprehension skill were (.12) and furthermore the t value was (.115), which was not statistically significant at (0.05), indicating that both groups are equal regardless of the teaching strategy used, conventional or six thinking hats, moreover the Table 1 shows that the differences between the control and experimental groups' mean scores on the pre-test for critical thinking skill were (.38), and that the t value was (.571), which was not statistically significant at (0.05). Moreover Table 1 shows that, before to the experiment, the Pre-test scores of the students in both groups were nearly identical. This demonstrated that the two groups were comparable before the experiment began. This demonstrated that there was no statistically significant difference in the reading comprehension and critical thinking exam results between the two groups for Pre-Students. Then, having confirmed the equality of the two groups, the researcher provides the following response to the study's questions:

Findings Related to the First Question

The first question of the current study states that "Are there any statistically significant differences between

the mean scores of the control group and experimental group in reading comprehension skill attributed to the teaching method (the six thinking hats and conventional method)?

The means and standard deviations of the control group and experimental group in reading comprehension skill attributable to the teaching method (the six thinking hats and conventional method) were computed in order to determine whether there were statistically significant differences. The t-test result are shown below in table (3) Table No (3)

The result of t-test for independent samples on the post test (reading comprehension skill) ( Means, standard deviation and t-test results of the experimental and control groups on the post students' reading comprehension skill.

|                             | GROUP        | N  | Mean  | Std. Deviation | T      | Df | Sig. (2-tailed) |
|-----------------------------|--------------|----|-------|----------------|--------|----|-----------------|
| Reading comprehension skill | Experimental | 26 | 40.31 | 7.641          | 10.439 | 50 | .000            |
|                             | Control      | 26 | 22.73 | 3.915          |        |    |                 |

According to Table 2, the t value was (10.43) which is statically significant at the level of the significant ( $\alpha=0.05$ ), this means that were statically differences between the mean scores of the students of the experimental group is (40.31) and the standard deviation is (7.641), while the mean scores of the control group is (22.73) and the standard deviation is (3.95) which means that the differences was in favor of the Experimental group. Furthermore, Additionally, Table (2) demonstrates statistically significant differences at ( $\alpha=0.05$ ) between the means of both groups (experimental and control groups) on the post-student reading comprehension skill, favoring the Experimental group due to teaching method, (This demonstrates that the six thinking hats method has an impact on the development of reading comprehension skills). This indicates that there is an effect for the six thinking hats method on the development of EFL female eleventh students' reading comprehension skill in Petra Directorate of Education. The preparedness of the students and the extent to which the instructor may ask various sorts of reading comprehension questions related to the symbols of the six hats determine the success of implementing the six thinking hats technique to build comprehension reading competence.

For answering the first question, means and standard deviations of the control group and experimental group in reading comprehension skill attributed to the teaching method (the six thinking hats and conventional method) were computed, as shown in table below.

Table No (4)

The result of the experimental and control groups on the post students' reading comprehension skill

Table (4): Means, standard deviation and of the experimental and control groups on the post students' reading comprehension skill.

|              | N  | Mean  | Std. Deviation |
|--------------|----|-------|----------------|
| Experimental | 26 | 40.31 | 7.641          |
| Control      | 26 | 22.73 | 3.915          |
| Total        | 52 | 31.52 | 10.718         |

Table - shows a slight variance in the means of the post Student's reading comprehension skill due to the teaching method (the six thinking hats and conventional method), to find out whether there are statistical significant differences in these means, one way ANOVA was conducted and the results are shown down.

Table No (5) ANOVA results of post reading comprehension skill test scores related to teaching tool.

| Source         | Sum of Squares | df | Mean Square | F       | Sig. |
|----------------|----------------|----|-------------|---------|------|
| Between Groups | 4016.327       | 1  | 4016.327    | 108.982 | .000 |
| Within Groups  | 1842.654       | 50 | 36.853      |         |      |
| Total          | 5858.981       | 51 |             |         |      |

Table 5 demonstrates statistically significant differences between the means of the two groups at ( $\alpha=0.05$ ) in favor of the experimental group. Since the significance value (.000) was higher than 0.05, it was demonstrated that there was a significant interaction effect between the six thinking hats method and achievement in reading comprehension skills. It indicates that the experimental group's students' performance on the post test varied significantly from their peers in the control group due to the method of instruction (six thinking hats)

## 12. Discussion of the Findings, Conclusions and Recommendations

### 12.1 Discussion of the Study Findings

This study sought to determine the impact of applying the six hats method on the reading comprehension and critical thinking abilities of female EFL students in the eleventh grade at Petra Directorate of Education. The particular goals were to ascertain the impact of implementing English language reading sessions utilizing the six hats method on the development of reading comprehension and critical thinking skills.

Discussion the Findings of the First Question

The first question of this study states that "Are there any statistically significant differences between the mean scores of the control group and experimental group in reading comprehension skill attributed to the teaching

method (the six thinking hats and conventional method)?

Based on the study's findings, there were statistically significant differences between the control groups and experimental group mean scores in reading comprehension ability, which can be linked to the teaching method of using the six thinking hats instead of the conventional method. This suggests that the reading comprehension skill can be affected by the six thinking hats as an independent variable and developed as an effective factor in determining the degree of reading skill implementation in English language. The teacher successfully taught reading comprehension while reading texts to the experimental group using the six thinking hats method, and she came to the conclusion that this method of instruction affects how effectively reading comprehension while reading texts is taught in the classroom, especially after the researcher had trained the teacher to use it. To maintain relationships and open lines of communication with the students while implementing this strategy, the teacher may need to employ a variety of questioning techniques. For example, the teacher may need to develop a number of questions, ranging from simple recall questions that stimulate the white hat to closed questions that present the yellow and black hats. On the other hand, the blue and green hats concentrate on the open questions that require (critical inventiveness, probing, and making decision replies) as well as the questions that require the students to express their feelings using the red hat; this was asserted by Ibraheem and Al-Shamrany (2020).

This in turn affects the student's performance and enhances their ability to respond to and comprehend the comprehension text questions and thoroughly analyze the texts. The results show that the experimental group's mean score was (40.31), whereas the control group was (22.73). In other words, the experimental group's beneficial difference in mean scores was likely due to the usage of the six thinking hats when teaching students. In actuality, the teacher observed that the experimental group's students were driven and had favorable evaluations of this method was asserted by, Tahrún & Noviatí (2019) and Ibraheem and Al-Shamrany (2020).

On the other hand, students in the control group who utilized the conventional method did not show any improvement in their comprehension skills; because some students find it difficult to arrange their thoughts so that they may reply to the many reading comprehension questions in the best way possible. Moreover, many students believe it is difficult to read a text and encounter various challenges, such as trying to guess the meaning, figuring out the major idea, evaluating texts, and figuring out the passage's message in order to gain a superior knowledge of the text.

This outcome may be attributed to the teaching strategy, which contrasts the six thinking hats with the conventional method used by the teacher with the control group and focuses on direct instruction in the classroom, which is the delivery of academic content to students by the teacher, such as through lectures or demonstrations. The teacher and students prefer the six thinking caps that encourage students' creativity, where the Students were better able to organize their thoughts and convey them clearly, the hats serve as tools for students to focus their attention and weigh alternate perspectives.

This result might also be ascribed to the teacher's training, which was urged to take part in discussions and study more about the six thinking hats technique based on using the researcher's guidebook or bank of questions that served as the foundation for teaching texts using this method. These encounters improved the teacher's comprehension of subjects that affected her lesson planning and her ability to incorporate reading texts with the method. This is also because the student's academic performance has improved because the teacher is able to manage the students' minds and emotions in the classroom.

The results also demonstrated that adopting the six thinking hats method as opposed to the conventional way resulted in statistically significant differences at ( $\alpha= 0.05$ ) between student achievement in reading comprehension competence, after employing the six thinking hats method in reading English-language texts. According to the post-test scores on the reading comprehension skill test that the researcher built, the findings of this study demonstrated a considerable improvement in the students' English language reading comprehension skills. However, the results of the students in the control group who received conventional method showed no improvement in their reading comprehension abilities, this result was asserted by Ibraheem & Al-Shamrany (2020)

The reason of there were significant differences regarding the domain of teaching methods to the lack of educational supervisors providing teachers with expertise and modern methods for teaching English language curricula . In addition to that the teachers find it easy the use of traditional methods of teachings that do not require time and effort to prepare for them. Additionally, teachers' fear of trying new educational methods because they believe that, the fact that there are so many students in the small amount of space and time available in the classroom may possibly be responsible for this outcome since it makes it difficult for the teachers to use cutting-edge teaching methods while teaching English. Along with lack of knowledge of everything new in the field of teaching methods and their lack of awareness of the importance of using them and their positive impact on the process of implementing the curriculum.

The results of the one-way ANOVA analysis revealed a significant interaction between the six thinking hats strategy and reading comprehension ability. However, this may also be attributable to the researcher's use of the t-test to compare the students' proficiency in reading comprehension between the two groups. It was found that the experimental group's students outperformed the control group's students in all areas of questions, scoring highly

comprehension domains. Students need frequent opportunities to practice reading comprehension. Additionally, Students need numerous opportunities to practice their reading comprehension skills before, during, and after the reading texts, interact with other students, and identify their own points of view in order to read more deeply and effectively. Therefore, in order to improve their reading skills, students should use this strategy to improve their reading comprehension skills, this result was asserted by Majid & AL-Tarawneh(2015) .

### 13. Recommendations

- The Ministry of Education should make a concerted effort to hire qualified teachers who will be essential in the implementation of new teaching tactics and various teaching approaches that are appropriate for era changes that affect student performance.
- The Ministry of Education should include teaching thinking skills in the secondary school English curricula, and teachers must integrate thinking skills, group work, problem-solving, and self-directed learning into their lessons for their students. To help students retain the knowledge they have learned during their training.
- The Ministry of Education should qualify teachers to pursue their post graduate studies such as Post Graduate Diploma in Education, Master's and Doctoral degrees in English/Education. This will help to improve teachers' quality of teaching and consequently improve the performance of students.
- School administrators should create programs for teacher exchange visits with other schools; to allow teachers to learn from one other's experiences implementing curricula.
- English supervisors should encourage teachers to use the six thinking hats method to help them formulate successful questions based on the good question specifications , and create some models of these questions that simulate Tawjihi exams and share them secondary teachers.
- English teachers themselves should constantly seek to advance their knowledge and abilities throughout their teaching careers to improving their capacity to instruct English language skills, concentrating on strategies that foster the development of creative thinking abilities so that students become conscious of their thinking.

#### 13.1 Suggestions for Further Research

- Further research can be conducted to that similar studies should be conducted on the effect of utilizing the Six thinking hats strategy in developing listening, speaking, and writing skills.
- Further research can be done to combine it with other variables (other skills) or to (compare it to other methods), such as problem-solving, brainstorming, mental maps, and creative thinking.
- Similar research can be directed on other stakeholders, including as policymakers, curriculum developers, and school principals.

### References

- Bhavsar, J. (2022, August 20). 7 Most Common Types of Reading Comprehension Questions. Word Coach. Retrieved November 21, 2022, from <https://www.wordscoach.com/blog/7-most-common-types-of-reading-comprehension-questions/>
- Bodur, K. (2018). Writing by putting on Edward De Bono's Six Thinking Hats: Critical thinking in Writing. *RumeliDE Dilve Edebiyat Arařtırmaları Dergisi*,1(13), 138-149.
- Bojovic, M. (2010, September). Reading Skills and Reading Comprehension in English for Specific Purposes. In *The International Language Conference on the Importance of Learning Professional Foreign Languages for Communication between Cultures*.23 (9), 1-6.
- Campo Baeza, A. (2021). Pre-reading: I'm still learning. *World Architecture Review*, 36(199), 33.
- Chall, J. S. (1983). *Stages of Reading Development*. New York, NY: McGraw-Hill.
- Channell, M. (2022, September 30). The Six Thinking Hats: How to Improve Decision Making, With Examples. TSW Training. Retrieved December 7, 2022, from <https://www.tsw.co.uk/blog/leadership-and-management/six-thinking-hats>
- Chawwang, N. (2008). An Investigation of English Reading Problems of Thai 12th-grade Students in Nakhonratchasima Educational Regions 1, 2, 3, and 7. Unpublished master's thesis, Graduate School, Srinakharinwirot University.
- Cornoldi, C., & Oakhill, J. V. (Eds.). (2013). *Reading Comprehension Difficulties: Processes and Intervention*. Routledge.
- Cohen, L., Manion L., & Morrison, K. (2007). *Research Methods in Education*. (6th ed). London: Routledge.
- De Bono, E. (1985). *Six Thinking Hats*. (1st ed) London: UK: Penguin Books.
- De Bono E. (1987). *Edward de Bono Six Thinking Hats*. Penguin books.
- De Bono, E. (1992). *Six Thinking Hats for Schools*. Lower Primary. Hawker Brownlow Pty Ltd.
- De Bono, E. (1999). *Six Thinking Hats*.(2nd ed) Granica Editions . UK: Penguin books.
- De Bono, E. (2000). *Six Thinking Hats*.(3rd ed). UK: Penguin books.
- De Bono, E. (2017). *Six Thinking Hats: the Multi-million Bestselling Guide to Running Better Meetings and*



- Making faster Decisions. UK: Penguin.
- Elmongy, O. E., Seif-Eldeen, A.H. & El-Sayed, A.A. (2022). Using Six Thinking Hats Strategy to Develop Secondary School Students' Writing Skills. *Journal of Education Dumyat*, 37(82), 2-47.
- Ghounane, N., & Rabahi, H.(2021) Embarking The Six Thinking Hats in EFL Students' Dissertation Writing at Saida University. *The Sixth International Conference on Languages, Linguistics, Translation and Literature*, 2(1),1-9.
- Gilakjani, A.P & Sabouri, N.B (2016), A Study of Factors Affecting EFL Learners' Reading Comprehension Skill and the Strategies for Improvement, *International Journal of English Linguistics*, 6(5): 180-187.
- Goldman, H. H. (2013). Today I Wear a Blue Hat, too. *Psychiatric Services*, 64(12), 1183-1183.
- Gonzalez, D. (2001). *The Art of Solving Problems: Comparing the Similarities and Differences Between Creative Problem Solving, Lateral Thinking and Synectics*. New York: International Center for Studies in Creativity, 1-96.
- Hahn, S. (2022). *Critical Thinking or Critical Creativity: Applying De Bono's Six Thinking Hats to Speech Language Pathology Education and Practice*. Electronic Theses and Dissertations. Paper 3870, 1-46 Available online at <https://doi.org/10.18297/etd/3870>
- Harmer, J. (1998). *How to Teach English: An introduction to the practice of English language teaching*. London: Longman.
- Hightower, A. (2019). *Implementing Edward de Bono's Six Thinking Hats Intervention for Improving Reading Comprehension Skills for Students with Learning Disabilities (SLD)* (Doctoral dissertation, Nova Southeastern University). ProQuest LLC Nova Southeastern University ProQuest Dissertations Publishing.1-134
- Ibraheem,M. A, & Al-Shamrany,S.S. (2020). The Effect of Using the Six Hats Strategy on the Development of EFL Female Third Secondary Students' Reading Comprehension Skills. *Journal of Arab Studies in Education and Psychology*, 123(123), 267-298.
- Ismail Fahmy Hashem, L. (2021). The Effect of Utilizing the Six Thinking Hats Strategy on Developing the English Language Speaking Skill and Attitudes Towards it Among Online EFL General Diploma Students. *Journal of Education Sohaj*, 87(87), 47-74. <https://doi.org/10.21608/edusohaj.2021.175350>
- Keefe, R. (2022, September 13). How to Use the Six Thinking Hats Method for Problem Solving. *Toggl Blog*. Retrieved December 7, 2022, from <https://toggl.com/blog/how-to-use-the-six-thinking-hats-method-for-problem-solving>.
- Kintsch, W. (1998). *Comprehension: A paradigm for cognition*. Cambridge, UK: Cambridge University Press.
- Kivunja, C. (2015). *Teaching, learning & Assessment: Steps Towards Creative Practice*. Oxford University Press.
- Lakshmi, B. R. (2017). Book-six thinking hats. *Adarsh Journal of Management Research*, 10(1), 80-83. <https://doi.org/10.21095/ajmr/2017/v10/i1/115203>
- Langan, J. (2008). *English Skills with Readings*. McGraw-Hill Higher Education.
- Leicester, M. (2009). *Teaching Critical Thinking skills*. Bloomsbury Publishing.
- Majid, A. K., & AL-Tarawneh, N. S. The Effect of Using the Six Thinking Hats Method on the Development of EFL Female Eleventh Grade Students' Writing Skill in Southern Al-Mazar Directorate of Education. *International Journal of Arts and Humanities*.1(4).1-14
- Meredith, N. (2013). Mastering Academic Reading. *Reading in a Foreign Language*, 25(1), 94-100.
- Mugenda, O. M., & Mugenda, A. G. (2003). *Research Methods. Quantitative and Qualitative Approaches*. Nairobi, Kenya: Acts Press.
- Nuttall, C. (1996). *Teaching Reading Skills in a Foreign Language*. Heinemann, 361 Hanover Street, Portsmouth, NH 0380, (1-3912).
- Rabiah, S. (2018). Language as a tool for communication and cultural reality discloser. 1-11.
- Serrat, O. (2017). Wearing Six Thinking Hats. In *Knowledge Solutions*, (pp. 615-618). [https://doi.org/10.1007/978-981-10-0983-9\\_67](https://doi.org/10.1007/978-981-10-0983-9_67)
- Shaun. (2021, January 1). How to use six thinking hats in the classroom? *Edugage*. Retrieved November 6, 2022, from <https://edugage.com/how-to-use-six-thinking-hats-in-the-classroom>.
- Smith, D. A. (2022, September 27). What are the 6 Thinking Hats? And How Can I Use Them at Work? *Making Business Matter*. Retrieved November 3, 2022, from <https://www.makingbusinessmatter.co.uk/6-thinking-hats/>
- Tahrur, T., & Noviati, N. (2019). Six Thinking Hats Strategy to the Eighth Grade Students of Pgri Junior High School 9 of Palembang. *Esteem Journal of English Education Study Programme*, 3(2), 66-76.
- Thomson, A. (2009). *Critical Reasoning: A practical Introduction*. London: Routledge.
- Tobing, I.R. (2013). *The Relationship of Reading Strategies and Self-Efficacy with the Reading Comprehension of High School Students in Indonesia*, Doctoral Dissertation, University of Kansas, USA: Kansas. Retrieved from [www.proquest.com](http://www.proquest.com).