



## The Effectiveness of Meta-Comprehension Strategy Use in Improving Freshmen Faculty of Education Reading Comprehension and Reducing their Reading Anxiety

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### Abstract

The present research aimed at investigating the effectiveness of meta-comprehension strategy use in improving EFL freshmen reading comprehension and reducing their EFL reading anxiety. Accordingly, a pre-post reading test and a pre-post English as a foreign language reading anxiety scale were designed to determine the effect of the suggested strategies before and after running the research. The selected sample consisted of 90 EFL students at Faculty of Education, Ain Shams University (N.90). The analysis of data found (using the one-sample t. test) revealed higher significance in favor of the post administration of the EFL pre-post reading test. The data analysis (using the one sample t. test) also revealed satisfying decrease in the sample's EFL reading anxiety in favor of the post administration of the EFL reading anxiety scale. Developing the sample's reading skills enhanced their comprehension and reduced their EFL reading anxiety. Discussion of findings, recommendations and suggestions for further studies were also offered. Finally, it was concluded that the study provided evidence for the success of the proper use of meta-comprehension strategies in enhancing EFL reading comprehension and reducing their EFL reading anxiety.

**Keywords:** reading comprehension, meta-comprehension strategies, EFL reading anxiety.

## فاعلية استخدام إستراتيجيات ما وراء الفهم في تنمية الفهم القرائي لطلاب الفرقة الأولى بكلية التربية وتقليل القلق القرائي لديهم

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### المستخلص:

هدف البحث الحالي إلى التحقق من مدى فاعلية استخدام إستراتيجيات ما وراء الفهم في تنمية الفهم القرائي لطلاب الفرقة الأولى بكلية التربية وتقليل القلق القرائي لديهم .. حيث أن هؤلاء الطلاب قد عانوا في المرحلة الثانوية من اختلاف نظم الاختبارات ومن ثم إهمال الطلاب لتنمية مهارة قراءة النص باللغة الإنجليزية.. ولقد قامت الباحثة بتصميم أداتي البحث وهما اختبار لقياس الفهم القرائي ومقياس القلق القرائي. تكونت عينة البحث من ٩٠ طالب وطالبة بالفرقة الأولى بكلية التربية قسم اللغة الإنجليزية بجامعة عين شمس وبتحليل النتائج إحصائياً باستخدام البرنامج الإحصائي للمجموعة الواحدة تبين أن هناك فروق ذات دلالة إحصائية واضحة بين متوسطات درجات المجموعة التجريبية لصالح التطبيق البعدي للاختبار الخاص بالفهم القرائي كما تبين أيضاً من خلال التحقيق الإحصائي لنتائج القياس البعدي لمقياس القلق القرائي من انخفاض ملحوظ في مستوى القلق القرائي لدى أفراد عينة البحث ولقد أسفرت نتائج البحث الحالي عن أن المتعلمين الذين يتلقون تدريب مبني على آلية وكيفية استخدام الاستراتيجيات المناسبة (متى وكيف ولماذا) قبل وأثناء وبعد قراءة النص قد تحسن الفهم القرائي لديهم ومن ثم انخفاض مستوى القلق القرائي لديهم . ولقد قامت الباحثة بتحليل النتائج إحصائياً ومناقشتها وبعد أن تبين مدى فاعلية البحث المقدم وإسهامه في القاء الضوء على أحد الآليات التي يمكن استخدامها في تنمية الفهم القرائي وتقليل القلق القرائي لدى أفراد العينة قامت الباحثة بتقديم التوصيات والمقترحات لدراسات لاحقة.

**الكلمات المفتاحية:** الفهم القرائي، إستراتيجيات ما وراء الفهم، القلق القرائي.

## The Effectiveness of Meta-Comprehension Strategy Use in Improving Freshmen Faculty of Education Reading Comprehension and Reducing their Reading Anxiety

### Introduction

Reading is said to be the essential academic language skill in foreign language learning context. In academic settings, reading is considered the central means for learning and gaining access to alternative explanations and interpretations. It is defined in some academic studies as being “fruitful”; not only for careers, study, or pleasure, but for language acquisition also. It is said to provide good model for English writing, offer opportunities to study vocabulary, grammar, and punctuation, and demonstrate the way to construct sentences, paragraphs, and entire texts. Coming to college students, Daguay & Haydee, 2020 stressed the fact that reading is a crucial skill that college students have to master. They attributed that to the fact that all academic courses and studies require students to read and most freshmen students lack the proper reading strategies that direct and help them be good readers, hence reading is a demand for one to succeed not only in the academic context but also in life beyond.

Comprehension is said to be the ultimate objective of the reading process or be the reason for reading; if a reader can read words but is not able to comprehend or connect to what s/he reads; it means s/he is not really reading. This leads to the fact that reading comprehension is not a matter of recognizing word by word, or even understanding each individual word as our eyes pass it over. All models of comprehension recognize the need for readers to build up a mental representation of a text: a process that requires integration across a range of sources of information, from lexical features up to knowledge concerning events in the world (Shea, 2017). Furthermore, comprehension process takes place in the brain of the reader; it is the thinking that s/he does, before, during and after text reading. So, students with poor comprehension skills usually encounter difficulties in activating prior knowledge, monitoring while reading and reflection after reading. These students with comprehension difficulties usually have problems that last and they often continue to have reading difficulties throughout their schooling.

Meta-comprehension is said to be the reader’s ability to think about one’s own thought processes, and modify their learning strategies as necessary. It allows the

reader to understand which skills, strategies and resources a task requires and know how and when to use these skills and strategies (Westwood, 2004).

Meta-comprehension strategies help students be meta-cognitive about the reading processes; make decisions about a text, and analyze its intricacies, i.e. be able to effectively use their schema of reading strategies to meet the specific needs of the passage. Therefore, meta-comprehension helps students select which comprehension strategies are necessary for various texts; helps them to remain focused ( Nadeem& Omar, 2018).

Since Comprehension is said to be the definitive goal of the reading process, everyone agrees that reading comprehension is not a simple matter of recognizing individual words, or even of understanding each single word; all models of comprehension recognize the need for readers to build up a mental representation of text, a process that requires integration across a range of sources of information from lexical features through to knowledge concerning the whole world's events. Given the complex nature of reading comprehension, it is not surprising that some individuals have issues in this area; their understanding of comprehension is mostly associated with the answering of teacher directed questions after reading. English as a foreign language (EFL) readers are quite limited in their meta-cognitive knowledge about reading (Mokhtari & Reichard, 2002). These readers are less likely to plan, activate prior knowledge, monitor, ask themselves questions or review how successful they are in their reading efforts. These students tend to rely on reading as a decoding process rather than as a meaning-getting process. It has been shown that such students can be cognitively engaged when they are taught to use meta-cognitive skills and strategies (Woolley 2006). Also, these students have been ascribed as not using meta-comprehension strategies effectively when reading; they read paragraphs of the text but still unaware of what they have read They try to decode unfamiliar scripts, writing system, cultural materials. If encountering difficulty in processing them all, they may get frustrated with reading and experience anxiety. The anxiety aroused during reading foreign language texts is known as foreign language reading anxiety (FLRA). Anxiety in general is a part of human emotions which includes distress and uncertainty, uneasiness and frustration or tension. Vasa and Pine (2006) believe that the three basic interrelated aspects of anxiety are psychological, behavioral, and cognitive, but it is the cognitive aspect which has received the utmost concern in recent studies.

Learning a foreign language is well thought-out as a cognitive and emotional demand. Anxiety is a kind of emotion and the issue of anxiety in foreign language learning has concerned language educators and researchers for many years. Studies in this concern have been conducted centering on the relation between anxiety and foreign language listening, speaking, or writing. Yet, little attention was paid to that of anxiety and FL reading. Ghazi (2020) assumed that foreign language reading anxiety is different from general foreign language anxiety and influence reading comprehension. Anxious students tend to recall less content of the text than less anxious students. Being unable to recall information from the text read means miscomprehension. Despite the lengthy research history, still foreign language reading anxiety, as Zhou (2017) and Alsawy (2019) asserted, has not been examined closely until recently. As several studies have acknowledged, this area of research needs more studies. It is important to investigate learning anxiety because we know that such a condition usually impedes the development of reading strategies.

### **Context of the problem**

Based on the previous introduction, studies in the field of reading comprehension and reading anxiety, modern exams policies students encountered along secondary stages, and researcher's experience in the field of teaching English language for students of all educational levels, it has become obvious that EFL students have problems in reading texts and their being anxious about failing in comprehending texts affects their comprehension negatively. Thus, the current research is an attempt at investigating the effectiveness of meta-comprehension strategies (global strategy, problem-solving strategy, and support strategy) in order to help freshmen faculty of education improve their reading skills and reduce their reading anxiety. Hence, the problem of the current research lies in EFL freshmen reading comprehension inability accompanied by reading anxiety.

The current research tries to find answer to the following main question:

“What is the effectiveness of meta-comprehension strategies in improving freshmen faculty of education reading comprehension and reducing reading anxiety?”

Also, this research tries to find answers to the following sub-questions:

- What is the effectiveness of meta-comprehension strategies in improving freshmen faculty of education reading comprehension?
- What is the effectiveness of meta-comprehension strategies in reducing freshmen faculty of education reading anxiety?

### **Research significance**

This research is supposed to be significant as It deals with anxiety prevailing in EFL contexts as a result of comprehension inability. Handling such a problem may provide an effective technique in remedying such an academic problem.

### **Research main objective:**

The current research mainly aims at identifying the effectiveness of meta-comprehension strategies in improving faculty of education English freshmen reading comprehension and reducing their reading anxiety.

### **Research Hypotheses**

- There are statistical significant differences at the mean scores of the experimental group on the post administration of the EFL reading comprehension test.
- There are statistical significant differences at the mean scores of the experimental group on the post administration of the English as a foreign language reading anxiety scale (EFLRAS).

### **Limitations**

- Faculty of Education freshmen students, both male and female.
- The second term of the school year 2022- 2023.

## **Operational definition for terms**

### **Reading comprehension**

*In this research, the following definition is adopted:*

“The intentional, interactive process that should occur when students read texts; it aims the level of reconstructing meaning from a text. This reconstruction comes from the interaction between the words that are written and the reader who generates knowledge and makes sense of what s/he reads”.

### **Meta-comprehension reading strategies (MRS)**

*In this research, meta-comprehension strategies refer to “the deliberate, conscious procedures used by EFL freshmen in order to improve text comprehension”.*

### **Foreign language reading anxiety (FLRA)**

*In this research, the following operational definition is adopted:*

“FLRA is the anxiety appears when EFL freshmen read texts consequently feelings of uneasiness, frustration, apprehension, or worrying arise”.

## **Theoretical background & related studies**

### **Reading comprehension in EFL academic context**

In academic context, reading texts does not mainly aim at recognizing words; it also means learning to make sense of texts. It involves a great deal of cognitive capacity available for comprehension (Tierney, 2005). So, reading is considered a crucial skill for university students. According to Grabe (2009) reading is considered to be an essential skill and apparently the most vital skill for foreign language learners to master in their academic settings and ensure their further progress. He believed that reading can be viewed as an access for getting, deploying, and learning upcoming knowledge. According to Eskey (2005) many EFL students may not need to speak English in their daily lives but they need to read it to access the richness of information in English. He added that many learners have difficulties in understanding what they read especially academic texts. Also, academic foreign language readers, though they have adequate language competency to some extent, still have difficulties in comprehending



those academic texts thoroughly. Hence, the ability to read academic texts is one of the most important skills.

Summing up, being a university student requires reading a large number of texts differing in their level of difficulty, style, length, topic etc. Students' prior knowledge, which plays an important role in reading comprehension, is also different among learners. The interaction of these factors makes the reading process at an advanced level a highly complex activity, which entails both cognitive and meta-cognitive processing.

### **Meta-comprehension reading strategies**

Asghar and Khabir (2017) categorized meta-comprehension reading strategies into; Global strategy, Problem-solving strategy, and Support strategy. This classification was said to be the most comprehensive one. Global reading strategy (GLOB) aims at paving the way for the reading act. It retains (13) techniques by which learners are taught how to manage their reading. Mokhtari and Sheorey (2002) stated them as follows:

- Read with a purpose in mind
- Think about what I know to help me understand what I read (pre-information)
- Over all view of the text to see what it's about before reading
- Decide whether the content of the text fits the reading purpose
- Review the text first by noting characteristics including length and organization
- When reading, decide what to read closely and what to ignore.
- Use tables, figures, and pictures in the text to increase understanding
- Use context clues to help better understand the reading
- Use typographical features like bold face and italics to identify key features
- Critically analyze and evaluate the information presented in the text
- Check understanding when coming across new information
- Guess what the content of the text is about when reading
- Check to see if guesses about the text are correct.

Problem-solving strategy (PROB) can be defined as localized, attentive problem-solving or a repair one used when reading problems occur in understanding textual material. It includes functions and manners that readers use when they



meet difficulties in comprehending textual information. It refers to functions like re-reading hard to understand text and adapting one's reading rate to the difficulty level of what they are reading. Mokhtari and Sheorey (2002) stated the techniques as follows:

- Read slowly and carefully to make sure I understand what I am reading
- Try to get back on track when distracted or lose concentration
- Adjust reading speed according to the reading material
- When text becomes difficult, pay closer attention to the material
- Stop from time to time and think about the reading
- Try to picture or visualize information to assist in remembering
- When text becomes difficult, re-read to increase understanding
- When reading, guess the meaning of unknown words or phrases.

Support reading strategy (SUP) comprises using the support mechanisms or tools aiming at sustaining receptiveness to reading. It comprises (9) techniques. It presents the use of producing outside reference materials. Mokhtari and Sheorey (2001) stated the following techniques:

- Take notes while reading to assist in understanding
- When text becomes difficult, read aloud to assist in understanding
- Underline or mark-up information in the text to assist in remembering
- Use reference materials (dictionaries, etc.)
- Paraphrase/restate to better understand
- Go back and forth in the text to find relationships among ideas
- Ask self-questions to find answers in the text

It was found clear that EFL college readers usually use Problem Solving strategy the most frequently and Support Strategies the least frequently. This is similar to the conclusion drawn by Wu (2005) that EFL college students preferred to use Problem Solving Strategy techniques the most and then Global Reading Strategy and Support Strategy the least. This might imply that EFL readers often come across reading issues, so they are used to applying reading strategies such as trying to get back on track when losing focus, but they seldom use reading strategies such as asking themselves questions or taking notes to support their reading.

### **Studies related to meta-comprehension reading strategies**

Zhang & Seepho, (2013) adopted the belief that meta-comprehension strategies are crucial for successful foreign language readers. They investigated the meta-comprehension strategies of English university major in academic reading. The participants were thirty-three third-year English majors. The data were collected by means of a meta-comprehension Strategy Questionnaire, a semi-structured interview and a reading comprehension test. The outcomes indicated that there was a substantial positive correlation between meta-comprehension strategy use and English reading achievement.

Rastegar, Mehrabi, Khabir (2017) investigated the correlation between EFL learners' meta-comprehension reading strategy use and their reading comprehension achievement. 120 Iranian EFL university students shared in this study. Two instruments were utilized: survey of reading strategies and a TOEFL reading comprehension test. After collecting the required data, the findings revealed a positive relationship between the use of overall meta-comprehension reading strategies by the participants and their reading comprehension achievement.

Ghazi (2020) investigated the roles of meta-comprehension reading strategies (global, problem-solving, support) in the reading comprehension of English as a foreign language university student. A total of 103 college EFL participated in the study. Data were collected using a reading comprehension test, and the survey of Reading Strategies Scale. Results revealed that global and problem-solving strategies were positively related to EFL reading comprehension. Informative implications emphasized the need for integrating instruction in the global and problem-solving strategies as well as using humanistic approaches in teaching EFL reading in order to augment comprehension.

### **Foreign language reading anxiety**

Anxiety has been classified into many types, and not all of them are particular to foreign language learning. These anxieties can be labeled as follows:

- trait anxiety, which is the tendency of a person to be nervous or feel tension regardless of the particular circumstances, and
- state (situational) anxiety, which is nervousness or tension at a particular moment in response to some outside stimulus (Macintyre, 1999).

In academic context, anxiety, associated with feelings of being uneasy, frustrated, apprehensive, or worried, plays an affective role in language learning. Researchers differentiated between "facilitative" and "debilitative" anxiety, claiming that the former motivates learners to make more efforts to overcome their anxious feelings and the later makes the learner "run away" from the learning task to avoid the source of anxiety

Although several pragmatic surveys were carried out to observe specific types of anxiety in foreign language oral communication function, listening, writing, and reading, it appears as Kuru-Gonen (2009) asserted that anxiety has still remained an under-appreciated. Affective variable in this domain namely "foreign language reading anxiety" has come into being, as Saito et al. (1999), a distinctive type of anxiety that is experienced by foreign language learners 'as a result of real issues in text processing rather than the reading difficulties stemming anxiety reactions (p. 215).

Though the four main skills of learning a language are considered the central areas for interconnecting with people from all around the world, the effect of reading and understanding reading materials must not be deserted especially when examinations are mostly reflected through written text (Rajab et al, 2015). Gonen (2011) declared the fact why FL reading would seem to have great impending for eliciting anxiety. He stated that FL reading anxiety is caused due to: (a) unacquainted scripts and writing systems and (b) unaccustomed cultural material. With respect to unacquainted writing systems, it seems likely that the less the learner can be contingent on the reliability of a specific system of sound-symbol letters, the more anxiety s/he would be expected to experience in the act of reading. In this case, the reader would experience anxiety as soon as s/he tries to interpret the script because the reader would instantly experience difficulty in dealing with the text.

Unaccustomed cultural materials would seem to have an impact at a point in the reading process that is less instant than that of unfamiliar scripts and writing systems. The reader would first come across the symbols, decode them into sounds, and associate the sounds with words, and then try to process the meaning of a text. It is at the point when the reader realizes that the words he or she has decoded do not constitute a clear or logical message unit that one would expect anxiety to set in. In other words, anxiety is also expected when a reader can

decipher the words of an FL text, but not its sense, because of incomplete knowledge of the cultural material underlying the text.

Arikunto (2008) and Sellers (2000) assured that students dislike reading because reading requires them to sit at one place for a long time in order to complete the reading tasks, thus the readers need to custom their cognitive abilities in the process of reading. This signposts that reading process requires the readers to submit to different kinds of mental processes including paying attention, perception, or understanding of the reading materials. They not only need to give extra attention to the knowledge of the foreign language, but also to the cultural background of the target language community. Hence, it becomes a multifaceted process because it entails several coinciding and interrelated skills, which is demanding on the learners' cognitive systems. The fact that some readers do not possess adequate linguistic knowledge of the target language may trigger the feeling of anxiety. Besides, wrong reading practices can also result in reading anxiety especially when the process of reading is apparent as a linear process between the reader and the text. It does arise especially when readers are able to decode the foreign vocabulary but are unable to interpret its true or intended meaning due to their lack of conceptual knowledge of the foreign culture. This may result in frustration and in due course to the increase in anxiety level.

Having reviewed the previous literature, it had confirmed that many essential queries concerning foreign language reading anxiety such as the sources of foreign language reading anxiety and the correlation between foreign language reading anxiety and foreign language reading performance had not been thoroughly investigated. Zhao (2009) asserted two main points concerning anxiety. First, foreign language reading anxiety was a construct that was related to but diverse from foreign language anxiety. Second, foreign language reading anxiety varied depending on diverse target languages. Also, there is ample studies concerning foreign language anxiety yet, few studies have investigated foreign language reading anxiety as a distinct spectacle (Alghothani, 2010).

The level of reading anxiety in a foreign language differs according to the target language and relates to the specific writing scheme. Congruently, the brain of Arabic native speakers pays a more effective strategy when reading English text than English native speakers do. That is the brain circuitry underlying reading for Arabic native speakers grows in a diverse way than that English native speaker and so on across the different languages with different orthographic structures.

Learners of English who learn French, Japanese, Russian, Spanish, or Chinese as a foreign language and Persian, Japanese, Spanish, Chinese, Taiwanese, Turkish, and Arabic who learn the English language as a foreign one have been researched. However, Arabic learners who learn English as a foreign language have rarely been investigated. The variances differ according to the target language and the writing system. Thus, Arabic learners who learn English as a foreign language are in dire need to be investigated (Alsawy, 2019).

According to Gonen's study (2009), the three main categories of FL reading anxiety are:

- **Anxiety caused by the personal factor:** with a total of six sub-categories:

1. Inappropriate Strategy Use
2. Fear of Comprehension
3. Lack of Motivation
4. Lack of Self-Confidence
5. Negative Background Experiences
6. High Expectations

- **Anxieties caused by the reading text:** with a total of five sub-categories:

1. Topics
2. Unknown Vocabulary
3. Complex Linguistic Structure
4. Unknown Cultural Content
5. Format of the Text

- **Anxieties caused by the reading course:** with a total of five sub-categories

1. Course Book
2. Classroom Environment
3. Compulsory Reading
4. Evaluation
5. Teacher

### **Related studies concerning anxiety and EFL reading comprehension**

The study of Al-shboul et al. (2013) explored the underlying problems and issues that contribute to reading anxiety faced by EFL students at Yarmouk University, Jordan. It was a qualitative exploration of the sources of English language reading anxiety for which observation, semi-structured interviews and diaries were collected from six informants with different levels of English language proficiency. The findings revealed that there were two aspects of foreign language reading anxiety: personal factor and text feature. Under the concept of personal factor there were also two main sources of foreign language reading anxiety, which are: afraid of making errors and worry about reading effects. On the other hand, there were three main sources of foreign language reading anxiety under the concept of text feature, which are: unknown vocabulary, unfamiliar topic, and unfamiliar culture. The five main sources of foreign language reading anxiety were arranged according to their occurrences and percentages in the study. Moreover, recommendations for further studies were proposed.

The main objective of Subasi's study (2014) was to confirm empirically that foreign language reading anxiety is a specific anxiety type distinct from the more general types of FL anxiety in the Turkish academic context and to explore the possible sources of reading anxiety which leftovers as a question mark in the research field. therefore, his study has to find out the potential bases of reading anxiety of Turkish learners. The study was conducted in the English Department of Faculty of Education at Anadolu University. Three instruments were used in order to fold data: The Foreign Language Classroom Anxiety Scale (FLCAS), the Foreign Language Reading Anxiety Scale (FLRAS), and semi-structured interviews. The scales and interviews of high anxious learners' analysis revealed six main sources with regard to FL reading anxiety: personal reasons, teacher's manner in the classroom, teaching procedures used in the class, the features of reading texts, reading test anxiety and their previous experience. The study also had some effects on reducing anxiety in the reading classes.

In their study, Rajab et al (2015) investigated the reading anxiety level of thirty-four participants from a private higher learning establishment. The FLRAS questionnaire was used as the instrument where mean and standard deviation were used as descriptive analysis. Results indicated that Linguistic Factors are the main factors that elicit reading anxiety among the foreign language learners. The results of this study are consistent with a study conducted by Miyanaga



(2002) who discovered negative correlation between the learners' reading anxiety levels and their reading scores. Her study on reading anxiety on Japanese university learners support Saito et. al. (1999) in that reading in a foreign language is indeed an anxiety-provoking activity. Based on her reflection, it was decided that "affective variables exerted a better influence on the participants' reading performance than their meta-cognitive awareness of various reading strategies" (Miyanaga, 2002: P. 12).

The study of Lien (2011) investigated EFL learners' reading strategy use in relation to reading anxiety after they had participated in extensive reading program as a supplemental course requirement. One hundred and eight EFL college freshmen completed a questionnaire, a survey of FLRAS, and a modified Survey of Reading Strategies. After eighteen weeks of participation in extensive reading, the results indicated that EFL learners with low anxiety levels tended to use general reading strategies such as guessing, while EFL learners with high anxiety levels employed basic support mechanisms, such as translation, to help themselves comprehend texts. Some reading strategies were additionally used by high-anxiety level readers than low-anxiety level readers.

## **Research methodology**

### **Research design**

A quasi-experimental design with a pre-post one experimental group type was adopted in this research. The data was collected to investigate the existing situation concerning EFL freshmen students (N.90), Faculty of Education, reading comprehension and reading anxiety as well. This was identified through pre-administrations of the EFL reading comprehension test and EFLRA scale. It was also identified through the post administration of the EFL reading comprehension test and EFLRA scale so as to compare the participants' results before and after study administration.

### **Reading for comprehension pre-posttest**

After identifying and validating the freshmen students reading comprehension skills and reviewing the Common European Framework of Reference for Languages (CEFR), the reading comprehension pre-posttest was designed. The test consisted of three reading passages. All the necessary instructions were given to the students before administrating the test. The researcher used two statistical



methods to check the statistical validity of the test: Discriminant validity and internal consistency validity on a sample consisted of (55) students other than the study sample and the results were as follows.

**Discriminant Validity for the reading comprehension test**

Reading Skills	Low-score individuals		High-score individuals		T. Value	Sig.
	Mean	Std. Deviation	Mean	Std. Deviation		
Total Score	14.923	0.954	22.076	2.596	9.323**	٠,٠١

**\*\* Significant at the level of significance (0.01)**

The researcher calculated the coefficient of correlation between individuals' scores on the questions items and the total score of the test as a whole. The coefficient of correlation between the items and the total marks on the reading comprehension test (N=55). The results indicated that there are statistically significant correlations between the scores of the sample individuals on the items and the total degree of the EFL reading comprehension test, which means the scale validity.

Coming to test reliability (the extent to which the measurement of the test remains consistent over repeated tests of the same subject under identical conditions), the Cronbach's Alpha equation and the split-half reliability are both used and indicated that the value of the alpha coefficient was high (0.820) , as well as the value of the reliability coefficient of split-half method (0.849), which means trusting the reliability of the test.:

Making sure that there would be no problems or difficulties that may face the students while administering the study, the pre-post reading comprehension test was piloted on a group of (N.55) freshmen students other than the experimental group. Consequently, it was calculated that a period of 60 minutes would provide suitable time for students to answer the test. This time was estimated according to the mean time equals the time taken by the first student plus the time taken by the last student by two. This is 60 minutes.

### English as a foreign language reading anxiety scale

The scale aimed at measuring sample's reading anxiety before and after administrating the research. In order to construct the EFLRA scale, the researcher advised Jafarigohar study (2012). In order to validate it, the researcher used Face Validity, Discriminant validity, and Internal Consistency Validity:

**The difference between the average scores of the sample at the Reading Anxiety scale sources (Low-degree individuals/High-degree individuals)**

The sources	low -score individuals		High- score individuals		"T" value	Sig.
	Mean	Std. Deviation	Mean	Std. Deviation		
<b>Total Score</b>	66.1021	3.45298	106.9971	7.15757	19.585**	,,٠١

\*\* Significant at the level of significance (0.01)

The results in the previous table indicate the statistically significant differences between the average of the high score individuals and that of the low score ones which mean that the scale is valid. Concerning internal consistency validity, the researcher calculated the coefficient correlation between individual's scores according to each statement and the total score of the whole scale. The results indicated that there is a statistically significant correlation between the scores of the sample individuals on the statements and the total score of the Reading Anxiety scale which mean that the scale is valid.

Concerning scale reliability, the researcher used Cronbach Alpha Reliability, and split-half reliability. In Cronbach Alpha reliability, the researcher calculated the reliability factor for each statement. At split-half reliability, the researcher divided the statements into two equal parts to measure the coefficient correlation for each statement, then inserting the correlation coefficient in Spearman Brown Correction Formula as follows:

- Number of statements: 24
- Reliability coefficient of Cronbach' Alpha: 0. 952
- Reliability coefficient of split-half: 0. 946

Hence, the EFLRA Scale was statistically proved to be reliable. Using Likert's taxonomy and taking care of the positive and negative responses, the scale was scored as follows:

- Strongly agree: 5 marks
- Agree: 4 marks
- In between: 3 marks
- Disagree: 2 marks
- Strongly disagree: 1 mark

### **Research application**

This research aims at developing EFL reading comprehension and reducing their reading anxiety through using meta-comprehension strategies.

- Freshmen students are given a theoretical background of meta-comprehension reading strategies and when, how, why, and for which situations the strategies are advised. The focus was on supplying students with a procedural knowledge of how to tackle reading problems.
- Modeling (positive exemplification): Through explicit modeling, the researcher provides a clear example of each strategy. The researcher gives instructions to guide students by describing the strategy, clearly describing the steps of performing its skills, breaking the skill into learnable techniques, and engaging students in learning through showing enthusiasm, keeping a steady pace, asking good questions, and checking for student understanding
- Collaborative group work: Students were divided into groups whenever they respond to the activities.
- Guided practice: The aim is to help the learner during the reading activity. Guided practice provides sufficient practice of all content that learners are asked to do independently.
- Free practice: where the chance is given to the students to act freely, express their opinions and take part in the discussion raised. Students are to apply the strategy taught to another text in which teacher's monitor is less than before.

### **Findings and discussion**

Validating the first hypothesis which stated "there are statistical significant differences at the mean scores of the experimental group on the post administration of the EFL reading comprehension test" and is statistically analyzed. The one sample T-Test statistical analysis was used and the data was treated as follows:

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**T-test & Std. D., obtained on the pre- and the post-test administration of the reading test in favor of the post administration**

The 1 <sup>st</sup> hypothesis	Pre (N=90)		Post (N=90)		“T” value	Sig.
	Mean	Std. Deviation	Mean	Std. Deviation		
There are statistical significant differences at the mean scores of the experimental group on the post administration of the EFL reading comprehension test	18.1989	3.4965	27.8382	2.5852	20.1010**	0.01

**\*\* Significant at the level of significance (0.01)**

**Validating the second hypothesis**

Based on the data analysis, the second hypothesis which states “There are statistical significant differences at the mean scores of the experimental group on the post administration of the English as a foreign language reading anxiety scale (EFLRAS)” is statistically analyzed. The one sample T-Test statistical analysis was used and the data was treated as follows

**T-test & Std. D., obtained on the pre- and the post EFLRA scale administrations in favor of the post one**

The hypothesis	Pre (N=90)		Post (N=90)		“T” value	Sig.
	Mean	Std. Deviation	Mean	Std. Deviation		
There are statistical significant differences at the mean scores of the experimental group on the post administration of the English as a foreign language reading anxiety scale	87.8790	5.3567	41.0890	6.31563	52.062**	0.01

Data in tables above showed that T. values obtained were significant in favor of the post administrations. The results gave comprehensive answers to the research questions. The answers were given through the statistical analysis of the supposed hypotheses. This research was a try to reframe EFL maladaptive strategy instruction and equip freshmen with meta-comprehension strategies to be at their disposal whenever text comprehension is not that good on the one hand, and to reduce their EFL reading anxiety on the other hand.

Using meta-comprehension strategies is considered consistent with empirical research findings. Providing students with the appropriate reading strategies enhanced their comprehension and reduced their anxiety. They discovered that they can read and comprehend different types of texts. They were able to vary comprehension strategies according to the type of the reading passage; a step which used to be vague for them. This kind of “ability” is the result of the fact that EFL students have become less anxious. Reducing students’ reading anxiety encouraged them to interact, participate, and trust their comprehension abilities. This is said to be consistent with previous research findings that lowering anxiety eases tension and stimulates comprehension (Siew, et al, 2011).

### **Recommendations**

Based on the findings of the study, the following recommendations seem pertinent:

- Reflective discussions should be taken into account when suggesting cognitive researches.
- EFL teachers need further training in detecting and diagnosing problems EFL learners encounter. They should be trained on how to help students detect the causes of any learning problem.
- Since EFL reading anxiety does exist among EFL readers, the foreign language reading courses should be designed in a way that promotes EFL learners’ ability to deal with different reading problems they might encounter both inside and outside the reading classroom.
- Promoting anxiety-free language learning environment must be a priority for EFL teachers. This anxiety-free atmosphere is a key to activating EFL students to take part in language learning activities, which, in turn, might be instrumental in remedying their reading debits.

## Suggestions for further research

Although this research shed some light on the importance of meta-comprehension strategies when providing a remedy for students with reading problems, a number of research avenues remain open. The following ones seem worthy attempting:

- Pairing meta-comprehension strategies with reflection-based intervention to enhance EFL learners' problem solving ability.
- Investigating the effectiveness and differences in gender on language learning anxiety.
- The effectiveness of using movies on reducing speaking anxiety in English classrooms.

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