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## A suggested program based on 21<sup>st</sup>-century skills and its impact on developing Palestinian Ninth Graders' reading Comprehension Skills

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### Abstract:

The study aimed at investigating the effectiveness of a suggested program based on 21<sup>st</sup>-century skills in improving 9<sup>th</sup> graders' reading comprehension skills. The sample of the study was two ninth-grade intact classes each was comprised of (41) students selected randomly from Beach Preparatory School "B" for Palestinian refugees in the West Gaza Area. One class constituted the experimental group while the other represented the control one. To realize the purpose of the study, the researchers implemented two tools: 1) a pre-post achievement test 2) a semi-structured interview. The findings of the study revealed that the suggested program based on 21<sup>st</sup>-century skills positively affected the 9<sup>th</sup> graders' reading comprehension skills. Furthermore, the results showed that the students in the experimental group were able to analyze, synthesize, and summarize the text, connect and relate ideas to their lives, and suggest creative solutions for the problems. It became clear that developing reading comprehension text in light of 21<sup>st</sup>-century skills upgraded understanding the content as it was greatly related to life and helped them to interact positively in different situations. In the light of the program, EFL Palestinian teachers are recommended teach the reading texts considering 21<sup>st</sup>-century skills as a means to improve the learners' reading comprehension skills.

**Keywords:** reading comprehension, skills, EFL, suggested program.

## برنامج قائم على مهارات القرن الحادي والعشرون وأثره على تطوير مهارات القراءة الفاهمة في اللغة الانجليزية لدى طلاب الصف التاسع

### المخلص:

تهدف الدراسة الى التحقق من أثر برنامج مقترح قائم على مهارات القرن الحادي والعشرون و أثره على تطوير مهارات القراءة الفاهمة للغة الانجليزية و تكونت عينة الدراسة من صفين من صفوف الصف التاسع و تم اختيارهم بالطريقة العشوائية من مدرسة ذكور الشاطئ الاعدادية "ب" للطلاب اللاجئين الفلسطينيين في منطقة غرب غزة التعليمية، احتوى كل صف على (41) طالبا، و تم اختيار احد الصفوف كمجموعة تجريبية بينما كان الصف الاخر مجموعة ضابطة. استخدم الباحث ادايتين دراسيتين وهما: اختبار تحصيلي قبلي وبعدي ومقابلة فردية شبه منظمه. وتوصل الباحث من خلال تحليل نتائج الدراسة الى ان البرنامج المقترح كان فاعلا في تحسين مهارات القراءة الفاهمة للغة الانجليزية، كما اظهرت النتائج ان الطلاب في المجموعة التجريبية لديهم القدرة على التحليل والتركيب والتلخيص لنصوص القراءة وكذلك القدرة على الربط بين الافكار واقتراح حلول ابداعية للمشكلات. وهذا يوضح بان تطوير نصوص القراءة الفاهمة في ضوء مهارات القرن الحادي والعشرون تسهل فهم المحتوى حيث انه مرتبط بشكل كبير في حياتهم ويساعدهم في التفاعل بإيجابية مع المواقف المختلفة. وفي ضوء هذه النتائج يوصى الباحث معلمي اللغة الانجليزية في فلسطين بتعليم نصوص القراءة في ضوء مهارات القرن الحادي والعشرون وذلك لتطوير مهارات القراءة الفاهمة والكفاءة الذاتية لديهم.

كلمات مفتاحية: القراءة الفاهمة، مهارات، اللغة الانجليزية كلغة أجنبية.

## Introduction :

English is one of the basic languages used in the United Nations and it's the most common language used in whole parts of the world. People consider it as the main language for communication despite the variations between their cultures, habits, and customs. It is an international language that it widely spread to cover all fields of life as technology and information, intelligence applications, social websites, search engines, the internet, trading markets, scientific research, education, tourism, agriculture, medicine, engineering, newspapers, and electronic media (Abu Nada, 2008; Aladini & Jalambo, 2021; Rao, 2019). In the recent changing world, communication skills are a precious gift that teachers should enable learners to promote.

Reading involves different skills such as writing, vocabulary, grammar, and spelling that can be taught through reading (Kavlu, 2015). Yet, Bojovic (2010) states that reading is an irreplaceable, sophisticated, active, interactive, flexible, and comprehending process that takes considerable time and resources to be developed. People devote a great amount of their reading time and interact with different types of materials for different purposes. Grabe and Stoller (2013) confirm that some people read the text to find simple information and skimming, others read for academic purposes, some of them read to merge information, write and critique the text, while others read for general comprehension (Ceyhan & Yıldız, 2021; McNamara, 2007; Sari, 2016).

English language readers vary in their degree of proficiency. In receptive skills (reading and listening), fluency involves a measure of the capability to analyze, synthesize, and extract the internal meaning, thoughts, and message of the writer.

English Palestinian curriculum includes reading skills that aim to equip Palestinian students with the most important skills to increase their abilities to read accurately and fluently. Thus, learners can read accurately and fluently different types of writing texts. Reading is one of the four skills of teaching the English language that aims to get students to read correctly and appropriately to grasp the message of the author (English Language Curriculum, henceforth (Najjar et al., 2015).

Several studies suggested different strategies to improve reading comprehension skills in the EFL classroom. Ghabanchi and Behrooznia (2014) and Al Masri (2019) confirmed that teaching reading comprehension skills through brainstorming was more effective than traditional strategies and it developed creative thinking and achievement. Hightower (2019) and Hashem (2021) maintain that the six thinking hats strategy improves various skills and attitudes for students. Dendup and Onthanee (2020) underlines the impact of cooperative learning in upgrading 4th-graders' English communicative abilities.

Similarly, Rombot et al. (2020) and Şentürk (2021) confirm that teaching through blended learning strategies develops reading comprehension skills achievement and 21st-century skills as well elementary school students in Indonesia. Moreover, Handira (2016) recommends using the creative reading strategy in teaching reading comprehension skills to the Eleventh Grade Students of SMA Negeri. In the same context, from the Netherlands, Yapp et al. (2021) emphasize the positive impact of the reading strategy instruction in English as a second language on students' academic reading comprehension. Zare et al. (2021) affirm that the critical thinking-oriented

dynamic assessment improves various skills and attitudes related to English language learning. Alfiyah (2020), Namaziandost et al. (2020), and Qadan (2018) assert the importance of using cooperative learning strategies in improving reading comprehension skills.

Berenji et al. (2020) and Lin (2017) recommend combining the English reading course with a problem-based solving approach to enhance reading comprehension ability, strategy use, and active learning attitudes.

It is fair to illustrate that the English for Palestine curriculum aims to strengthen Palestinian students' abilities to think creatively, critically and to be creative problem solvers as these skills are duly stressed in the curriculum document.

### **Defining Reading Comprehension**

Snow (2002) defines reading comprehension as a simultaneous process of inferencing and forming meaning through interaction and engagement with the written language. Israel and Duffy (2014) and Seif (2012) agreed with Snow's (2002) definition and added that reading comprehension is a process of constructing meaning, which includes several harmonious cognitive processes during which the reader extracts the textual information and relates it to his background knowledge to comprehend the text. They see that reading is a harmonious process in which the students can confirm their understanding of the reading text through extracting the main information, digesting the implicit and the explicit meaning of the writer to construct deep understanding. Utomo and Syamsi (2019) and Lin (2017) and Kavlu (2015) emphasized that learning to comprehend English texts is a unique and essential skill to practice materials and acquire professional knowledge in different subject fields .

The investigators in the current research define reading comprehension as an active communicative process of learning. Learners use their abilities to read with a purpose to get the implicit and the explicit messages of the writer, the thoughts, the facts, and the information to recognize the words, make a conclusion, analyze and synthesize the text to understand the writers' goals and the texts' message to suggest solutions for the factual problems.

### **Twenty-First Century Skills Defined**

Casner-Lotto and Barrington (2006) see that 21st-century skills refer to the applied skills that the entrants have mastered in schools to be practiced in the workplace later. These skills are based on cognitive abilities such as creative and critical thinking, flexibility in problem-solving, readiness to work within a team as well as more social and ethical values. Binkley et al. (2009) state that these skills could be taught in schools and the school should shift its ways of teaching to prepare students to face complicated and challenging situations.

The current researchers define the term 21st-century skills as those referring to the required competencies enabling individuals to struggle against life difficulties. These skills are significant, unique, and extremely necessary for them to acquire and learn personal, social, ethical, and technological skills to involve in and adapt themselves to the new challenges in life and the workforce.

## **Twenty-First Century Skills and Education**

The new vision of 21st-century learning emphasizes the need to change the purpose of the educational system and schools to meet the demands of the working markets. Thus, the main concern has shifted from access to equitable quality education to lifelong learning, training, and skills for work and life (Bangkok, 2013; Ross & Genevois, 2006). According to Rudi (2011), educational goals in the 21st-century era aim to prepare people for a dynamic, unpredictable, and vicissitudes of the world, to free unique individual intelligence, to produce innovators, and to enhance creative behaviors.

## **The Twenty-First Century Learning Strategies**

Ministry of Education (MOE) in Palestine appropriated the English language to be taught to Palestinian learners from the first grade, and great efforts have been devoted to finding appropriate strategies for teaching the English language. According to Bianchi and Abdel Razeq (2017) communicating fluently in English is yet to reach the minimum standards of quality needed in the learning English curriculum as stated by the Ministry of Education in Palestine. Using teacher-centered methods and strategies of teaching such as the grammar translation method, the direct method, and the Audio-lingual approach in the classrooms as a medium of teaching the English language are serious impediments to improving students' English skills. In this regard, interactive teaching strategies have been explored to help English students. Examples are the thinking learning strategies and active learning strategies (Sripradith, 2019).

## **Joint skills between reading comprehension skills and 21st-century skills**

Reading comprehension skills are not far away from 21st-century skills. Problem-solving, creative thinking, and critical thinking are joint skills and they are part of the 21st-century skills. Thus, when teachers teach reading comprehension skills, they spontaneously find themselves training the students to practice 21st-century skills .

## **Creative thinking**

Creative thinking is defined as the ability to produce different ideas to solve problems, allowing people to practice logical and divergent thinking processes to generate ideas. Zubaidah et al. (2017) see that creative thinking is the ability to produce remarkable and unpredicted ideas, astonishing, and significant in divergent modalities. Riadi et al. (2021) state it is the process of producing new products in problem-solving that can give different answers and solutions. Birgili (2015), argue that creative thinking refers to the entire cognitive activities that the individual use in a specific problem, life-situation, and a kind of effort expended towards a particular situation or problem. They use their background knowledge, experience, imagination, intelligence, thoughts and ideas to resolve the problem. In addition, it is a digging process into ideas, openness to finding and producing ideas, and being a good listener to the team's opinions .

## Critical thinking

Gambrill and Gibbs believe (2017) critical thinking involves the careful examination and evaluation of actions and beliefs. Facione et al. (1995) opine that critical thinking refers to "the use of the cognitive skills or strategies that increase the probability of a desirable outcome".

Cottrell (2017) argues that critical thinking is a logical reflective thinking process where individuals take decisions through some certain logical processes of interpretation, analysis, evaluation, discussion, inferencing, and self-regulation

Facione et al. (1995) and the American Philosophical Association (APA) (1990) state that critical thinking is a targeted, and evaluative process, which drives problem-solving and cognitive skills. At the core of critical thinking are the following cognitive skills, interpretation, analysis, evaluation, explanation, and self-regulation.

## Problem Solving

Dostál (2015) sees that problem is understood as a difficulty of theoretical or practical nature that raises the inquiry attitude of the subject and leads individuals to specific knowledge. Ayhan and Dusek(2014) state that problem-solving is a cognitive process in the mind, which investigates solutions for problems or searching to find a way to realize goals. It is considered a cognitive process that concentrates on finding solutions for specific problems to achieve the required aims. Rahman,( 2019), Hwang et al. (2019) agree with the former scholar and see that problem problem-solving is a complex process that requires students to understand and share the information from the problem, create a mental image of the problem and finally select the correct path to a solution. Other scholars relate the definition of problem problem-solving to the previous knowledge, which has already existed in the students' minds, rules, techniques, skills, and concepts to provide a new and adequate solution (Barham, 2019). Therefore, the researchers of the current study define problem-solving as an intellectual process that happens in the mind. It requires the students to understand the surrounding events around the problem to formalize a mental image of it and to draw on the previous knowledge, experience, analytical skills, the scientific thinking, the critical thinking, generalizing, analysis and synthesis to present a creative solution for the problem.

## Problem -Solving Criteria

Kimsua and Jogthong (2020) state that problem-solving is a systematic process that begins with data and information and ends by making decisions. This process includes a continuum of steps and procedure to arrive at solutions.

1. Identification of the problem, this stage includes observing the issue and analyzing its components.
2. Finding information in the sources provided and describing the collected data and information.
3. Generating options and providing reasoning for a plan to present solutions for the problem.
4. Applying the plan using different resources and tools.
5. Showing flexibility; continuing to revise the plan to arrive at the best solution.
6. Evaluating, justifying and defending the relative effectiveness of the process or the plan.

## Teaching Reading Comprehension

Reading comprehension is the most important skill taught in schools, and the ability to read accurately and fluently is the ultimate goal of teaching reading skills to Palestinian students. Najjar et al. (2015) confirm that oral and written language is a means of communication and interaction used by people from different social and cultural backgrounds to talk and represent themselves, interact with others, learn about others, and meet their individual and collective needs. Hence, successful linguistic learning ensures the importance of functional proficiency. Patterns of language usage vary from nation to nation; every nation has its habits, beliefs, values, and traditions. To learn a new language is to learn the norms, habits beliefs, and behaviors that exist in the new culture, and thus extend one's sociocultural competence to the new environment .

### Reading skills in English for Palestine

Najjar et al. (2015) illustrate that educational psychologists, linguists, and educators mention several convincing rationales for learning the second/foreign language. These are improving jobs opportunities, knowing the values of other cultures, and upgrading mental capacity. To achieve these objectives, previous methods of teaching foreign language, which focused on drilling, memorizing, and teaching the rules of the language are not commensurate with the twenty-first-century skills. Rather, these methods should be replaced by the new methods, that focus on the students as the center of the process of teaching and learning and whom the language proficiency should target.

In a proficiency-based curriculum, language proficiency is seen as the performance aspects of language function, interaction setting, and degree of accuracy. Therefore, language functions are the ultimate goals, for which the language is performed. Future employment opportunities will be controlled by an international marketplace, and one's ability to communicate easily with others from different backgrounds, their chances to win the desired job will be increased. Experts and specialists believe that those with basic levels of understanding are those who possess skills that enable them to exchange ideas and information with people from different cultures, and different languages.

### Statement of Problem

A number of strategies, approaches and techniques were introduced by specialists and educators in the field of teaching reading comprehension skills to upgrade and cultivate these skills among learners of English as a foreign language. Unfortunately, regardless of these efforts, Palestinian learners of English in general and ninth graders in particular have been experiencing difficulties when they are confronted with reading passages followed by tasks requiring them to answer questions tapping on higher order thinking skills (Qishta, 2018).

A review of literature uncovered that using 21<sup>st</sup> century skills haven't been manipulated, to the best knowledge of the researchers, to teach reading comprehension passages to ninth graders. Of particular importance is the fact that the thinking strategies used to teach these skills namely, the six thinking hats, brainstorming, blended learning, problem problem-solving based approach, and the five fingers strategy haven't been tapped on.

Therefore, the researchers strongly believe that this intervention based on 21<sup>st</sup> century skills makes the current research unique and fill the gap and is hoped to make a difference in the reading performance of ninth graders.

## The Study Questions

- 1) What are the most important reading comprehension skills that the Palestinian ninth students should possess to improve their reading comprehension skills?
- 2) Are there statistically significant differences at ( $\alpha \leq 0.05$ ) between the total mean scores the experimental group students get on the post-reading comprehension skills test and the total mean scores the control group students get on the same test?

## Significance of the Study

Based on the researchers' best knowledge, no previous studies were conducted based on 21st-century skills. Thus, this is a new methodology, which is used to teach English reading skills. In addition, this method combines five thinking skills strategies related to 21st-century skills and reading comprehension skills, making learning the English language more enjoyable and purposeful.

Additionally, thinking strategies upgrade strategies that promote acquisition compared with conscious learning as the process of learning is a learner-centered process rather than a linear one. In addition, the themes of the thinking strategies ensure innovation, critical thinking, problem-solving, blended learning, and cooperative learning that make the national syllabus align with the local and global trends calling for paying attention to teaching methods and strategies.

## Delimitation of the Study

1. The study deals with the joint skills between 21st-century skills and reading comprehension skills, which are (creative thinking, critical thinking, and problem-solving).
2. The study will be applied in the scholastic year 2020-2021.
3. The sample of the study is (82) male students from a UNRWA Beach Prep Boys "B" school .
4. The study focuses on reading comprehension skills.

## Definition of the Study Terms

- A Suggested Program: is an interactive program that is implemented in a rich educational environment and is comprised of different thinking strategies, which are the six thinking hats, brainstorming, blended learning, problem problem-solving based approach, and the five fingers strategy to teach and develop reading comprehension skills.
- 21<sup>st</sup> Century Skills are the skills that are related to reading comprehension skills, these skills are based on cognitive abilities such as creative thinking, critical thinking, and flexibility in solving problems. Binkley et al. (2009) confirm that these skills can be taught in schools and the school should be transformed in ways to prepare students to face complicated thinking, flexible problem-solving cooperation, and communication skills to be able to struggle and compete in the workplace and life.
- Reading Skill: Anderson (2003) states that reading is an eloquent process of readers' integrating information from the written texts with the background knowledge to understand the meaning.

The researchers define it as a process of interpreting and extracting information-encoded in language from the medium of print and its comprehension occurs when the reader can recognize, understand, interpret, infer and extract information from the written text and relates it to his prior knowledge .

## Literature Review

Based on the researchers' best knowledge, no previous studies have been conducted in Palestine that investigated the effectiveness of a suggested program based on 21st-century skills in improving reading comprehension skills in the field of education. Yet, several studies were conducted in Turkey and Iran to investigate the strategy's impact in the field of business and marketing. The researchers divide the studies into five sections, each represents a single thinking strategy.

### **First: the impact of brainstorming strategy on developing reading comprehension**

1. Ghabanchi and Behrooznia (2014) sought to identify the impact of brainstorming on the reading comprehension and critical thinking ability of EFL learners. The sample of the study comprised fifty-four TEFL university students studying at a university of Mashhad. Out of the (54) students (30), students were female and (24) were male. A pretest and posttests were used to collect the data and the Watson-Glaser Critical Thinking Appraisal was administered to measure the students' abilities in critical thinking. The results showed that brainstorming strategy had a positive impact on both reading comprehension skills and critical thinking.
2. Masri (2019) explored the impact of brainstorming on the development of creative thinking and achievement in the English language of the 10th-grade students at King Abdullah II schools of excellence in Amman. To achieve this purpose, the researchers conducted an experimental study. The study sample consisted of (168) students. Data was collected by using tests to measure creative thinking in English and achievement tests in the English language. The result showed that there was a positive impact of the brainstorming strategy on both creative thinking skills and achieving the English language.

### **Second: the impact of the six thinking hats strategy on developing reading comprehension**

1. Hightower (2019) conducted a quantitative study to identify the influence of the Six Thinking Hats as a method used to strengthen SLD students' reading comprehension skills at high school in Florida. The participants of the study consisted of (100) students identified with Student Learning Disabilities from grade 9 through grade 12. The target group was from grade 9 and grade 10. The main instrument used for collecting the data was a Pretest and posttest. Results showed that the six hats strategy had a positive impact on enhancing reading comprehension skills among SLDs.
2. Hashem (2021) carried out a study with the aim of exploring how the Six Thinking Hats technique impacted on the development of English language speaking skills and attitudes regarding the skill among online EFL General Diploma students. The study included 32 participants. The data was collated using a sub-skills checklist, a speaking exam, and an attitude scale. The findings proved that the six hats technique positively affected the development of English language speaking skills and attitudes among online EFL general diploma students.

### **Third: the impact of the cooperative learning strategies on developing reading comprehension**

1. Alfiyah (2020) sought to reveal the effectiveness of the cooperative learning typescript strategy in reading comprehension. The participants of the study were the seventh-grade students of MTs Al Ikhwan Kemudi Duduk Sampeyan Gresik. The data was collected by using a test and an observation card. The results showed that there was a great effect of the



- cooperative typescript strategy on reading comprehension and teachers had an effective role in implementing the strategy.
2. Namaziandost et al. (2020) explored the impact of the jigsaw technique on enhancing reading comprehension. Pretest and posttest were given to the learners to collect the data. The participants of the study were 50 Iranian pre-intermediate EFL learners who participated in 20 sessions. The sample of the study was divided into two groups; the experimental group was taught by the jigsaw technique while the control group was taught by using the traditional techniques. The results of the study showed that there was a positive impact of the jigsaw strategy on enhancing reading comprehension skills.
  3. Qadan (2018) investigated the effectiveness of using active learning strategies in enhancing reading comprehension and self-efficacy among Gaza fifth graders. The study recruited seventy-two male students who were equally bifurcated into two equal groups: the experimental group, who were taught using active learning tactics (jigsaw and five fingers strategy), and the control group, who were taught using the traditional way. A reading comprehension skills test and a self-efficacy beliefs questionnaire were used to collect data. The findings disclosed that active learning strategies had a favorable impact on improving reading comprehension skills and that there was a relation between active learning strategies and reading comprehension skills.

#### **Fourth: the impact of blended learning strategy on developing reading comprehension**

1. Şentürk (2021) investigated the effect of the blended learning model on pre-service teachers' academic achievements and twenty-first-century skills. (86) Pre-service teachers from the Faculty of Education at Karamanoğlu Mehmetbey University were considered as the sample of the study. Academic achievement test and the multidimensional twenty-first scale were used as the main tools for collecting data. The findings revealed that the blended learning model has positive impact on the pre-service teachers' academic achievement and twenty-first-century skills.

#### **Fifth: the impact of problem-based approach strategy on developing reading comprehension**

1. Berenji et al. (2020) conducted quasi-experimental research to know the effect of using problem-based learning with hard scaffolds on Iranian learners' reading comprehension. The sample of the study was divided into two equivalent groups, the experimental and the control group, and each comprised (40) students. A pretest and posttest were the main tool for collecting data. Findings showed that there was a significant impact of the problem-based learning with hard scaffolds strategy in favor of the experimental group on reading comprehension skills.
2. Lin (2017) investigated whether an English reading course combined with a problem-based solving approach could enhance reading comprehension ability, strategy use, and active learning attitude. To achieve the aim of the study, the researchers used an experimental method design. The participants were (56) students chosen randomly from the Taiwanese university. Pretest and posttest were held to collect the data. Results showed that the problem-based solving participants exhibited a higher degree of active English learning attitude than the participants in the control group did, and there was a statistically significant positive correlation between reading comprehension ability and English learning attitude.

## Commentary

The researchers reviewed the previous related studies and they found that several studies investigated the impact of the thinking strategies on reading comprehension. However, it could be noticed that the previous related studies involved only one thinking strategy to measure its impact on reading comprehension skills. Ghabanchi and Behrooznia (2014) and Al Masri (2019) used brainstorming. Hightower (2019) and Hashem (2021) investigated the impact of the six hats strategy. Alfiyah (2021) Namaziandost et al. (2020) used cooperative learning strategies. Şentürk (2020) explored the effect of a blended learning strategy on pre-service teachers' academic achievements and twenty-first-century skills, while Berenji et al. (2020) and Lin (2017) sought to explore the impact of problem-based learning strategy. The studies were implemented mainly in Turkey and Iran. The findings of the previous related studies revealed the effectiveness of the strategies used for enhancing the joint skills between reading comprehension skills and the 21<sup>st</sup> century skills. The studies drew the attention of the researchers to design and choose suitable tools to collect the data. Moreover, the researchers found no certain study that investigated the impact of selective thinking strategies on improving reading comprehension skills. Thus, this study is unique in examining such a topic that adds a new interesting approach to the strategies of teaching English .

### Methodology:

#### Design of the Study

The study followed a mixed methods approach to collect the quantitative and qualitative data. The explanatory design was conducted to explain the quantitative data and to help the researchers explain the problem in-depth. The research includes two variables; the independent variable is a suggested program based on 21st-century skills. The suggested program employed the thinking strategies, while the control group was taught the syllabus-based text. The experiment lasted for four weeks.

Fifteen forty-five-minute Lessons were given to students within three weeks starting from the 27th. Feb.2021 and ended on 22nd. March.2021. The (15) lessons were divided into three weeks. Objectives, behavioral aims, teaching aids, the procedure of teaching, and the assessment tools of the reading texts. Units 8, 9, and 10, from the English textbook were constructed and modified. The content was appropriate for the level of the students.

#### The Sample of the Research

Two intact ninth-grade classes chosen randomly from the Beach Preparatory Boys "B" school for Palestinian refugees in Gaza city. Each class included (41) students, one class constituted an experimental group while the other was a control group. The students in both groups were equivalent economically, culturally, socially, and in their general achievement. The students were aged 15 years.

#### Data Collection tools

Two instruments were used to collect the data; a pre-posttest reading comprehension skills test and an individual semi-structured interview.

#### Reading Comprehension Achievement Test

The researchers gave the arbitrators a list of all the English comprehension reading skills included in the curriculum document totaling 21 skills and asked them to select the most important nine reading skills Palestinian ninth graders need to master to prosper in both school life and life

outside school. A majority of the referees selected the nine reading skills covered in the study. As a result of the process of refereeing the reading skills, the researchers constructed a reading skills achievement test to be used as a pre and posttest in the study.

A pre-post reading comprehension skills achievement test was constructed and administered to the participants by the researchers.

### **The general objectives of the test**

The test aimed at measuring the effect of a suggested program based on 21st Century skills on improving reading comprehension skills. It was constructed according to the criteria of the test specifications. The objectives of the program are developing the nine reading skills selected by the arbitrators as the most important for Palestinian ninth graders these reading skills constitute the answer of the research first question.

### **The sources of constructing the test**

The researchers relied on the governmental English for Palestine- grade nine textbooks, which have been implemented since 2014 taking into consideration the changes of designing the curriculum that happened after that period.

### **The items of the test**

Eight questions were included in the test. They were mainly testing the selective objectives from the referees. The items of the test are similar to the reading activities in the textbook for grade nine and suited all levels of students; the items were as follows:

Question 1, Students identify the main idea of the reading text and the supporting details.

The Rubric is: Decide if the following sentences are True (T) or False (F).

The Objective is: Identify the main idea of the reading text and the supporting details.

Question 2, Distinguish fact from opinion.

The Rubric is: Decide whether the following sentences are Fact (F) or opinion (O).

The Objectives are: Differentiate between facts and opinions.

Question 3: - Develop awareness about synonyms and antonyms.

Deduce the meaning of unfamiliar words from context.

Suggest a suitable title for the text.

The Rubric is: - Get from the text.

The synonym of ...

The antonyms of ...

The underlined words refer to,

Suggest a suitable title for the text.

The Objectives are: - Develop awareness about synonyms and antonyms.

Identify the main idea of the reading text.

Deduce meaning of unfamiliar words from context.

Suggest suitable title for the text.

Question 4, Infer mood and author's attitude or tone.

The Rubric is: Choose the suitable answer.

The Objective is: Express personal feelings and opinions.

Question 5, Relate text to personal experience, opinion or evaluation.

The Rubric is: What would you do in the following situations?

The Objective is: Evaluate the situation and relate it to personal experience and opinion.

Question 6, Analyze components of text such as setting, theme, characters etc...

The Rubric is: Complete the table from the text.

The objective is: Analyze components of text such as characters, responsibilities, and give examples.

Question 7, Extract and synthesize information from different sources.

The Rubric is: Write briefly about the members of the voluntary team and their responsibilities.

The Objective is: Synthesize information from the table.

Question 8, Summarize reading text.

The rubric is: Answer the following questions.

The objective is: Summarize the text by using the "WH" questions.

### Pilot study

The researchers administered the test to a pilot sample totaling 30 students who have the same characteristics as the study sample, to calculate the validity and reliability of the test, and to determine the time specified for answering the test, in addition to making sure that the items are clear and the meanings are sound.

### Validity of the test

Validity of the tool means "that the tool measures what it was designed to measure and does not measure anything else. The validity of the can be achieved in several ways, the simplest of which is presenting the test to the arbitrators" (Tammam, Shadia and Salah, Salah, 2016:397). The validity of the test was verified through:

- A. The arbitrators' validity: The researchers presented the test in its initial form to a group of specialized arbitrators, in order to verify the validity of the questions in addition to taking their opinions about the clarity and formulation of the questions, and their suitability. And in the light of the arbitrators' observations and recommendations, which varied between modifying some items, and reformulating other items, the test was formulated in its final form, which consisted of (8) questions.
- B. **Internal consistency validity:** In order to ensure the validity of the test's internal consistency, the researchers calculated the Pearson correlation coefficient between the scores of each domain of the test with the total score of the test. The results showed that there was a statistically significant relationship between the domains and the total score of the test. The results were as follows:

**Table ( 1) Correlation coefficients of the test items with the total score of the test**

No.		Pearson Correlation	Sig. value
1)	Q1	0.883 **	0.000
2)	Q2	0.826 **	0.000
3)	Q3	0.813 **	0.000
4)	Q4	0.829 **	0.000
5)	Q5	0.843 **	0.000
6)	Q6	0.887 **	0.000
7)	Q7	0.904 **	0.000
8)	Q8	0.843 **	0.000

\*\* Correlation is significant at the 0.01 level

It is clear from the previous table that all test domains were statistically significant at the significance level (0.01) with the total test score, and the correlation coefficients ranged between (0.813-0.904) . The seventh question recorded the highest correlation coefficient (0.904), whereas the third question recorded the lowest correlation coefficient (0.813). Considering this, the results confirmed that all the main domains of the test were internally consistent with the test as a whole.

### The test reliability

Al-Hariri (2012, P144) states that a test can be considered stable only when the test results are nearly the same when the is repeated under the same conditions. The researchers used the following techniques to ensure reliability:

- a) Split-half: it depends on splitting the test into two halves and then finding the correlation coefficient between the two halves of the test using the Pearson method, after which the correlation coefficient is corrected by the Spearman - Brown equation if the two parts are equal, or Guttman's. which does not require the variance of the two parts of the test to be equal. The reliability of the test was calculated by the split-half technique by calculating the correlation coefficient between the mean scores of the sample members in the first part, and the mean scores of the sample members in the second part, and then the results came as follows:

No.		Value
1.	Variance of Part 1	14.00
2.	Variance of Part 2	21,673
3.	Correlation Between Forms	0.823
4.	Spearman-Brown Coefficient	0.903
5.	Guttman Split-Half Coefficient	0.891

The table shows that the correlation coefficient of the two parts of the test equals (0.823) and the value of the stability equation using the Guttman Split-Half equation equals (0.891), which is a high value that indicates that the test has a high degree of stability. This reassures the researchers to administer the to the study sample.

- a. **Cronbach`s Alpha** : The reliability of the reading skills achievement test was also calculated by calculating the Cronbach's alpha equation, and the reliability value equaled ( 0.92 ), which is a high value that also confirms that the test has a high degree of stability that reassures the researchers of the validity of the data that will be obtained.

### Determining test time

The time required to answer the test questions was determined by calculating the average time taken by the exploratory sample to answer the test, according to the following equation:

Time to answer the test = (time for the first student to answer + time for the last student to answer) / 2

The average time taken for the sample was ( 40 ) minutes, and (10) minutes have been added in order to give the student a greater opportunity to review as well as carefully read the test instructions, so that the time limit for answering the test is ( 50 minutes).

### **Semi- structured interview**

The interview was employed as a tool for collecting study data in order to support the results with qualitative information. For this purpose, the researchers prepared an initial set of ten questions to be asked to the study sample members in order to investigate their opinions about the experiment. The researchers presented the questions to the arbitrators to take their opinions about the clarity of the questions and their suitability, and in light of the observations and recommendations of the arbitrators, which varied between modification, deletion and reformulation, the interview questions were completed in their final form, which consisted of **5 questions**.

The researchers interviewed 22 students and asked them the following questions:

- Do you think that the program helped you develop your creative and critical thinking? How?
- Do you feel that the program helped you to upgrade your reading skills?
- How did you feel about the program? Why?
- What are the difficulties that you found during the implementation of program? Explain!
- What is the strategy did you like most? Why?

### **The suggested program**

It aims to improve reading comprehension skills.

**The objectives of the program are developing the nine reading skills selected by the arbitrators as the most important for Palestinian ninth graders these reading skills constitute the answer of the research first question.**

### **The design**

The researchers reviewed the literature on how to connect between the 21st century skills and reading comprehension skills and then they designed the program accordingly.

### **The content**

Three reading texts (units 8, 9 and 10, second term) from the English textbook were adapted. The content was constructed in such a way that suited the students' level. Besides, the researchers took considered the opinions of English language specialists, the coordinators of the curriculum development unit in the education department in UNRWA, ninth grade English teachers in the UNRWA and the methodologists

### **Teaching strategies**

The researchers are going to make use of the following thinking learning strategies namely, Brainstorming, the Six Thinking Hats, The Five-Fingers, Blended Learning, and Problem- based learning approach.

### **Implementation**

(15) Lessons (of 45 minutes for each) were given to students within three weeks started from 27th. Feb.2021 and ended on 22nd. March.2021. The (15) lessons were divided into three weeks.

### **Assessment**

Formative assessment tools were used, which included in the program to scaffold the students' learning. Students were assessed regularly and continuously using different assessment techniques and activities. These tests include peer-assessment, self-assessment, poster-assessment, authentic assessment, large class- assessment and virtual assessment as well. Moreover, e learning class resumed at night on the what's app was used to provide help, assistance, and to make virtual debates with the students.

### Equivalence between experimental and control groups

The researchers administered the reading comprehension skills test to both the experimental and control groups to ensure the two groups' equivalence in the reading comprehension skills. T-test was used to investigate the statistical differences between the control and the experimental groups in their previous learning of reading comprehension skills.

**Table (3): T-test results of controlling students' mastery of Reading Comprehension Skills**

Questions	Group	M	SD	T	Sig. value	sig. level
<b>Identify the main idea of the reading text and the supporting details</b>	Experimental	1.195	0.579	1.310	0.226	Not sig.
	Control	1.402	0.830			
<b>Distinguish fact from opinion</b>	Experimental	1.304	0.546	0.461	0.701	Not sig.
	Control	1.378	0.857			
<b>Develop awareness about synonyms and antonyms. Deduce meaning of unfamiliar words from context</b>	Experimental	2.195	2.082	0.732	0.489	Not sig.
	Control	1.890	1.664			
<b>Infer mood and author's attitude or tone</b>	Experimental	1.731	0.922	1.857	0.084	Not sig.
	Control	2.097	0.860			
<b>Relate text to personal experience, opinion or evaluation</b>	Experimental	1.487	0.711	0.762	0.554	Not sig.
	Control	1.609	0.737			
<b>Analyze components of text such as setting, theme, characters.</b>	Experimental	0.963	0.616	1.388	0.199	Not sig.
	Control	1.158	0.656			
<b>Extract and synthesize information from different sources</b>	Experimental	0.682	0.414	1.397	0.210	Not sig.
	Control	0.853	0.663			
<b>Summarize reading text</b>	Experimental	1.256	0.582	0.143	0.929	Not sig.
	Control	1.231	0.922			
<b>Total</b>	Experimental	10.365	5.279	1.151	0.261	Not sig.
	Control	11.792	5.928			

Table (3) shows that there were no statistically significant differences at (0.01) and (0.05) between the mean scores the experimental got on the pre- reading comprehension skills test and the mean scores the control group got on the same test. Moreover, not only were the two groups equivalent in terms of the total mean scores but also, they were uniform in the mean scores they got in the sup-reading skills.

### Results of the Study

#### Answer to research question one

#### What are the most important reading comprehension skills that Palestinian ninth graders should possess to improve their reading comprehension?

English language specialists and experts designed a new syllabus for Palestinian students. English language curriculum (2015) document shows the aims and the objectives for each school level and each language skill. As stated, the ultimate goal for teaching the language is communication in different and several social situations to interact and to express feelings and needs. Successful language learning and teaching emphasize the goal of functional proficiency. The researchers used a checklist of the preceding 21st skills as a tool for 9th grade English language teachers and English language specialists. Hence, the most important skills that got more than 90% were adopted. These skills were as follows:

- 1) Identify the main idea of the reading text.
- 2) Identify supporting details.
- 3) Distinguish fact from opinion.
- 4) Develop awareness about synonyms and antonyms.
- 5) Infer mood and author's attitude or tone.
- 6) Relate text to personal experience, opinion or evaluation.
- 7) Analyze components of text such as setting, theme, characters.
- 8) Extract and synthesize information from different sources.
- 9) Summarize reading text.

The teachers and the supervisors considered the above-mentioned skills as the most important.

#### Answer to the second research question which reads:

Are there statistically significant differences at ( $\alpha \leq 0.05$ ) between the total mean scores the experimental group students get on the post-reading comprehension skills test and the total mean scores the control group students get on the same test?

To answer this question, a Hotlings' T2 was used to examine the results of the posttest of reading comprehension skills for the control and the experimental groups. The mean scores and standard deviations of students' scores on the reading post-test were calculated, as shown in table 4:

**Table (4): Two –sample Hotlings' T2 results for the post reading comprehension skills test**

Questions	Group	M	SD	T	Sig. value	sig. level	$\eta^2$
Identify the main idea of the reading text and the	Experimental	2.646	0.339	9.285	0.000	Sig	0.683
	Control	1.195	0.941				



supporting details							
<b>Distinguish fact from opinion</b>	Experimental	2.146	0.374	5.258	0.000	Sig	0.409
	Control	1.378	0.857				
<b>Develop awareness about synonyms and antonyms. Deduce meaning of unfamiliar words from context</b>	Experimental	2.744	0.725	4.736	0.000	Sig	0.359
	Control	1.427	1.626				
<b>Infer mood and author's attitude or tone</b>	Experimental	3.488	0.656	8.225	0.000	Sig	0.628
	Control	2.098	0.860				
<b>Relate text to personal experience, opinion or evaluation</b>	Experimental	3.317	0.599	11.502	0.000	Sig	0.768
	Control	1.610	0.737				
<b>Analyze components of text such as setting, theme, and characters.</b>	Experimental	1.683	0.556	7.687	0.000	Sig	0.596
	Control	0.683	0.620				
<b>Extract and synthesize information from different sources</b>	Experimental	4.146	1.914	10.405	0.000	Sig	0.730
	Control	0.854	0.663				
<b>Summarize reading text</b>	Experimental	2.524	0.921	7.346	0.000	Sig	0.574
	Control	1.159	0.753				
Total	Experimental	22.695	4.384	10.828	0.000	Sig	0.746
	Control	10.402	5.797				

Based on the analysis of the total results of the achievement test, table (4) shows that the mean scores of the experimental group on the post test of reading comprehension skills is (22.695) and that of the control group is (10.402) and this shows that the experimental group students got higher marks than the control one did. In addition, the calculated T. is (10.828) and the significance value is (0.00). Thus, these results confirm that the program based on 21st century was effective and yielded positive results.

In detail, the experimental group members' mean scores on identifying the main idea of the text and the supporting details, which ranked fifth, was 2.646 whereas that of the control group was 1.0195. In distinguishing fact from opinion, which ranked seventh, the experimental group members got a mean score of 2.146 and the control group got 1.378. Regarding awareness about synonyms and

antonyms and deducing meaning of unfamiliar words from context that ranked fourth, the experimental group got 2.744 while the control group got 1.427. Besides, the experimental group members significantly outperformed their counterparts in the control group on inferring the mood of the author's attitude and tone, which ranked second, as the former got 3.488 and the latter got 2.098. In the case of relating text to personal experience opinion or evaluation, which ranks third, the experimental group students got 3.317 and the control group students got 1.610. With regards to the skill of analyzing components of text which ranks sixth, the experimental group students got 1.683 whereas the control groups students got 0.683. In extracting and synthesizing information from different sources, which ranked first, the experimental group got 4.146 and the control group members got 0.854. In summarizing reading text, which ranked eighth, the experimental group got 2.524 and the control group got 1.159.

Considering the effect size of the program on the experimental group' mastery of reading comprehension skills as a result of the intervention showed that the study participants significantly outperformed their counterparts in the control group in the total score of the test and all the sub skills. This shows beyond doubt that the program was extremely effective in fostering comprehension reading skills among the treatment group.

### **Interpretation of Results**

#### **The first question**

The first question which reads as follows: **What are the most important reading comprehension skills that the students should possess to improve their reading comprehension?**

The researchers used a checklist for the preceding reading comprehension skills as a tool for English language teachers and supervisors to decide the ones that are most important for 9th graders. Thus, the skills that got more than 90% were considered as the most important skills (Appendix 2). The skills that were identified by the experts are considered as a reflection mirror to creative thinking skills, critical thinking skills and problem solving. These skills are joint skills between the 21st century skills and reading comprehension skills. In addition, the researchers were inspired by the E.L.C document of the Ministry of Education and the UNRWA Reform Strategy, which confirm the importance of teaching creative thinking skills, critical thinking skills and problem-solving to the Palestinian students.

#### **The second question**

The second question of the study examines the significant differences between the mean scores the experimental group got on the posttest of reading comprehension skills test and the mean scores their counterparts in the control group. The researchers manipulated the thinking strategies when implementing the program. They used brainstorming which is a technique of generating ideas and sharing knowledge to solve a particular problem in which the participants are encouraged to think without interruption. It is a group activity where each participant shares their ideas as soon as they come to mind. The researchers resorted to brainstorming systematically in reading classes to help students generate as many ideas as they could. They suspended issuing value judgments regarding the ideas the students contributed to the discussion. This enabled the participants to feel secure when they participated in the discussion and not hesitate to take part. The researchers started every reading lesson with a 5-minute discussion task. The researchers encouraged novel and innovative ideas, however, odd they may first appear. The quantity of the ideas was more important than the

quality so while ideas were shared every person and every idea had equal worth. Each idea generated belonged to the group rather than to the individual who thought of it. This was intended to develop co-operative learning among the participants. Our results agree with those of Ghabanchi (2014) and Al Masri (2019) who confirmed that teaching reading comprehension skills through brainstorming was more effective than traditional strategies and it developed creative thinking and achievement.

Furthermore, the researchers made use of the six thinking hats which is a method used to foster creative thinking by ensuring that the broad variety of viewpoints and thinking styles were represented. Using six roles or hats allowed teams to more easily structure abstract thinking for productive results. The white hat is objective and focuses on facts and logic. The red hat is intuitive and focuses on emotion and instinct. However, the black hat is cautious and used to predict negative outcomes. The yellow hat is optimistic used to look for positive outcomes. The green hat is creative hat where ideas are abundant and the criticism is spare. The blue hat is the hat of control used for management and organization. The researchers divided the participants in a discussion task into six groups where every group assume a role or wear a colored hat. The researchers made sure that the groups changed the hat from discussion to another to guarantee that they all perform the six hat roles and not stick to one single hat. This was meant to make the participants experience all the roles. The results in this research conformed to the results reached by Hightower (2019) and Hashem (2021) who maintained that six thinking hats improved comprehension skills and attitudes of the students who used them in learning.

Likewise, the researchers benefited from blended learning strategy and fruitfully used it with the experimental group in addition to the prescribed number of sessions. The researchers used e-learning sessions at night. In these electronic sessions the students were given additional time for concentrating on the reading material. In these sessions, the researchers used to give the students detailed feedback on their contribution and the learning tasks at hand. The feedback was personalized. Every individual was able to contact the researchers and discuss with them the problems and difficulties they faced in the morning sessions. They received answers to their questions and they were corrected in private. These sessions were friendly and help the researchers to create friendly rapport between the researchers themselves and the students. Besides, the researchers used these sessions to give the students extra activities and equipped the researchers with more fruitful time to follow closely the experimental group members' work. The researchers noticed that the students responded to these sessions positively. These sessions enabled the researchers to scaffold every individual in the learning process. The results of this paper agree with Rombot et al. (2020) and Şentürk (2021) who confirmed that teaching through blended learning developed reading comprehension skills achievement and 21<sup>st</sup> century skills as well.

### **Interview**

The researchers resorted to a semi-structured interview to get more insight and understanding of the results and their interpretation. They interviewed 22 students from the experimental group. The interviewees were asked five questions. Their answers were as follows:

In response to the first question of the interview which reads **Do you think that the program helped you develop your creative and critical thinking? How?** all the interviewees said that the program developed their creative and critical thinking skills because the program included various

learning strategies intended to promote these two skills. In response to the **how part** of the question, they unequivocally agreed that the learning environment was filial and warm. They were allowed to express themselves and contributed to the activities without feeling anxious or apprehensive. They said: we felt that our contributions were respected and valued. Moreover, the researchers were understanding towards our language performance and tolerant towards our language weakness.

In the response to the second question which reads **Do you feel that the program helped you to upgrade your reading skills?** Twenty students reported their satisfaction with the program's contribution to improving their reading comprehension skills. They reported that the program included many and various interesting activities in which they were engaged both in the face to face reading sessions and in e-learning classes resumed at night.

In the response to the third question which reads **How did you feel about the program? Why?** the sample members reported that they felt content with the program. They additionally cited the following reasons for their liking of it. They said that the program was interesting and fruitful and the activates considered their individual differences. And the drills were graded in terms of complexity.

In the response to question four which reads **What are the difficulties that you found during the implementation of program? Explain!** The interviewees reported that they had difficulty with the continuous power cut and this drove them to go to the internet coffee shops and their friends' houses to attend the e-learning sessions.

In the response to question five which reads **What is the strategy did you like most? Why?** all the interviewees expressed their appreciation of teaching strategies, brainstorming, six thinking hats, blended learning and problem-based learning strategy and the five figures strategy. The rank order of the strategies for the students was: brainstorming, six thinking hats, blended learning problem-based learning and finally five fingers strategy.

Apparently, teaching reading comprehension through the thinking strategies based on the 21<sup>st</sup> century skills foster students' motivation and allows them to be more engaged in the learning process. Teachers were motivated and enthusiastic to help students learn. In a study by Taştan et al.( 2018), they found that and motivation have a positive impact on the students' academic achievement in science education.

The thinking strategies based on the 21<sup>st</sup> century skills could be effective strategies due to the current study findings for teaching reading comprehension skills to the Palestinian students. However, the effectiveness of the thinking strategies, the application of these strategies faces some challenges. Overcrowded schools with large classes, most of these schools' work in double shifts. In such overcrowded classes, some students are left behind because they have special educational, psychological, social or physical needs and many students lack the basics of reading and writing although they spent at least nine years learning English at schools (UNRWA, 2015). Teachers in the lower elementary stage are overloaded with about 27 classes a week. In addition to that, the COVID19, which hit the country and citizens lived under complete or partial closure to all sectors in the country in the last two years.

In the suggested program based on 21<sup>st</sup> century skills, there are some activities given to the students to act locally and think globally, to enable students to acquire and practice creative and critical thinking skills, communication, cooperation and to create innovative solutions for the

critical problems. Palestinian students in Gaza Strip and in the West Bank show enthusiasm when they think critically and creatively and find appropriate solutions for the sophisticated problems. These skills of thinking include identifying, distinguishing, comparing, analyzing, synthesizing, evaluating, suggesting and choosing the best solution for the problem. Moreover, these processes cooperate internally in minds and externally in performance; they activate the students' thinking abilities (Dendup and Onthanee, 2020).

### **Conclusion:**

The results of this study have revealed that students who learned English through the suggested program based on the 21st century skills have significantly improved their English level in reading comprehension skills and language elements. Even though the time allocated for implementing the experiment was not enough and the closure of the schools at the beginning of April 2021 because of the spread of COVID19 Virus. The current study is unique in its idea as it dealt with the joint skills between the 21st century skills and 21st century skills. There are many studies related to 21st century skills and their impact on reading comprehension. However, the researchers did not find any previous studies that handled the teaching of the joint skills between the 21st century skills and the reading by using five thinking strategies. The results of the current study revealed that the use of the suggested program based on 21st century skills is effective in teaching different skills related to 21st century skills. The researchers try this new method to develop learners' reading comprehension skills and this is new in Palestine. 21st century skills are important to the Palestinian students especially in their political and social cases. In addition, 21<sup>st</sup> century students have to be active learners by engaging them in authentic, interactive, cooperative, synchronous and non- synchronous activities.

### **Recommendations**

In light of the study results, the researchers recommended that:

- Ninth grade teachers should use the teaching strategies investigated in this research namely, barnstorming, five fingers, six hats, blended learning and problem-based teaching strategies when they teach reading as these strategies proved effective in helping students develop their reading skills, creativity, and problem-solving.
- Ninth grade teachers should make their reading classrooms warm, and motivating learning environment where the students feel relaxed, comfortable, safe and willing to participate and contribute to classroom discussions. It is known that students abstain from participating in classes where they feel they are risking their self-esteem and self-image.
- Supervisors are recommended to hold training courses for English language teachers train them on how to implement the teaching strategies investigated in this research.
- Supervisors are recommended to train the teachers how to cater for the 21<sup>st</sup> century skills as these are essential for students to prosper in real life situations and make them keep abreast with the latest updates.

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