

# THE EFFECTS OF STRATEGY TRAINING ON THE USE OF GLOBAL READING STRATEGIES: IMPLICATIONS FROM THINK-ALOUD AND EYE-TRACKING DATA

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## ABSTRACT

Considering the critical role of reading strategies in L2 reading this study aimed to investigate the impact of strategy training on Turkish EFL learners' use of global reading strategies. 23 freshmen, enrolled in the ELT Department, participated in the study, and the data were collected through eye tracking and think-aloud protocols. The results are encouraging for the use of reciprocal teaching, one of the comprehension-enhancing approaches to teach reading, in the EFL contexts. Eye tracking results, hand in hand with the think-aloud protocols' findings, revealed that the participants utilised global reading strategies more frequently to a statistically significant degree after the strategy instruction. Thus, it was concluded that strategy training was useful for the participants to improve their use of global reading strategies, and a recent technological tool can be purposefully integrated into the data collection procedure of educational research studies. Pedagogical implications on the strategy training for the employment of global reading strategies that would help students improve reading skills need to be given attention by teachers.

**Keywords:** Reciprocal teaching, global reading strategies, eye tracking, reading in L2, tertiary Turkish EFL students.

## INTRODUCTION

A learner can find a variety of ways to enhance his or her learning and making use of enhancement strategies can be effective in increasing learner autonomy. However, unless learners are aware of what learning strategies are, and how they can get the benefit of them, developing and sustaining autonomy might be highly challenging. Therefore, strategy instruction has been suggested with the aims of increasing learners' metacognitive awareness of learning strategies (Alrabah & Wu, 2019; Annury, Mujiyanto, Saleh & Sutopo, 2019; Ashadi, 2019; Aziz, Nasir & Ramazani, 2019; Carrell, 1989; Deliany & Cahyono, 2020; Kung & Aziz, 2020; Kusumawardana & Akhiriyah, 2022), promoting learner autonomy as well as learners' self-esteem

and self-efficacy (Hong-Nam & Leavell, 2011), fostering critical thinking (Mohseni, Seifoori & Ahangari, 2020), and specifically improving learners' reading comprehension skills (Alfassi, 2004; Alshammari, 2022; Altahap, 2022; Dole, Brown & Trathen, 1996; Sporer, Brunstein & Kieschke, 2009).

As a method allowing learners to actively participate in the process of comprehending reading materials, reciprocal teaching (Palincsar & Brown, 1984; Puspita & Nuroh, 2022) helps learners to internalise reading strategies. The four components of reciprocal teaching "predicting, questioning, summarising, and clarifying" also constitute global reading strategies (Mokthari & Reichard, 2002, p. 252), and they can function as both "comprehension-fostering and comprehension-monitoring activities if used properly" (Palincsar & Brown, 1984, p. 121). Besides, it is suggested that strategy instruction through reciprocal teaching results in successful outcomes, which can be attributed to "the particular strategies trained, to the reciprocal teaching procedure, or to a combination of both" (Palincsar & Brown, 1984, p. 168). Considering that fluent readers' most common purpose for reading is "to read for general comprehension" (Grabe, 2009, p. 10), the importance of developing strategic reading to facilitate reading comprehension can be clearly understood. More precisely, as it was noted by Koda (2005, p. 221), "strategic reading is an essential competence for anyone reading for the purposes of thinking and learning' and learners' being aware of their own capabilities in terms of reading and comprehending a text ensures successful comprehension.". Similarly, Garner (1987, p. 50) argues that reading strategies, which are "generally deliberate and planful activities undertaken by active learners, many times to remedy perceived cognitive failure" by her own definition, have facilitative effects on reading comprehension, and they can be taught as well. This statement is also in line with Mohseni et al.'s (2020) views since they pinpoint that "reading comprehension is not an acquired skill and entails instruction" (p.2) and they further emphasise the need for the most effective instructional approach in teaching reading. As Par indicates in his study (2020, p. 227) "reading strategies may cultivate reading skills through frequent practice and use".

In this connection, it can be noted that guiding learners to make them efficient reading strategy users can make them better comprehenders and readers. Additionally, if participants are informed about the possible benefits of utilising reading strategies, learner autonomy, self-esteem and self-efficacy can be supported as well. Taking the facilitative effects of strategy instruction into account, the present study aimed to examine the efficacy of strategy training, which was conducted through reciprocal teaching, by carrying out think-aloud protocols and utilising eye tracking.

## Definitions of the Key Terms

*Reciprocal teaching* is a method proposed first by Palincsar and Brown (1984). Four comprehension strategies are emphasised in this method: predicting, questioning, clarifying, and summarising. The teacher models the sequence and the process, then encourages learners to be the leaders guiding the process. Each student takes a role in turn and accordingly, makes predictions on the text to be read, asks questions to comprehend the text better and more efficiently, clarifies the unclear points or summarises the text.

1. *Summarising*: It can be regarded as the ultimate outcome of reciprocal teaching process because learners are expected to make a summary of what they comprehend after they put forward predictions on the content of a text, pose questions related to the incomprehensible parts and clarify them. Moreover, to summarise the information, "learners need to analyse the text globally" (Cotterall, 1990, p. 56), and to verbalise what they understand, they are supposed to put main ideas in their own words, which means first recognising and rewording them by paraphrasing. Therefore, summarising can be described as a strategy that enfolds the other three strategies.
2. *Questioning*: Putting questions related to the reading material provides opportunities for learners to take charge of comprehension process – that is to say, since they themselves generate questions, "they can become much more involved than they do when answering questions of the teacher" (Palincsar & Brown, 1986, p. 772). Therefore, encouraging learners to discover the points they do not understand well enough to comprehend the text and to pose questions about these points will make them more efficient readers and better comprehenders. Additionally, by doing so, learners can evaluate themselves, "which facilitates self-testing" (Meyer, 2010, pp. 43-46).

3. *Clarifying*: Once learners generate questions about what they do not understand at all, they need to find clear explanations to comprehend the text and to fulfil the tasks meaningfully. Clarification process can be led by the leader. However, the point is that all the learners should get involved in the process because there may be some learners who indeed do not understand well. Moreover, they have certain difficulties in comprehending the text and believe that “the purpose of reading is saying the words correctly” (Palincsar & Brown, 1986, p. 772), and bringing them on to read may be possible by making them involved in the process. Learners should be encouraged to use “contextual clues, tables, figures, pictures and typographical aids like bold face and italics to both increase understanding and identify key information” (Mokhtari & Reichard, 2004, p. 393).
4. *Predicting*: The underlying aim of directing learners to make predictions about the text can be to activate learners’ background knowledge about the topic of the text. Once a learner has brought to his or her mind an awareness of what is already known about a subject matter, the reading text can be comprehended more consciously, which enables him or her to focus on problematic points more easily. Because learners’ schemata can be activated suggesting predictions on a specific topic, the reading process becomes more meaningful and purposeful as well. Furthermore, making predictions enables learners to “draw certain inferences related to the given texts and make use of them while reading” (Oczkus, 2013, p. 35).

*Global reading strategies* are the strategies determined clearly in Mokhtari and Reichard’s (2002) study. They developed an inventory to evaluate readers’ metacognitive awareness of reading strategies. The inventory consists of three main types of reading strategies: global reading strategies, problem-solving strategies, and support reading strategies. However, in the current study, use of global reading strategies, which can be listed as follows, are examined specifically: setting purpose for reading, activating prior knowledge, checking whether text content fits purpose, predicting what text is about, confirming predictions, previewing text for content, skimming to note text characteristics, making decisions in relation to what to read closely, using context clues, using text structure, and using other textual features to enhance reading comprehension.

*Eye tracking* is a technology that enables researchers to examine eye movements of the participants by using a device named as eye tracker. With recent developments in technology and important advancements in eye tracking, now it is quite possible to utilise this technology in the field of language teaching, too.

## REVIEW OF LITERATURE

Several studies have been conducted to investigate whether reciprocal teaching is efficient in improving reading comprehension of learners with reading disabilities (Al-Qahtani, 2021; Bruce & Chan, 1991; Gersten, Fuchs, Williams, & Baker, 2001; Klingner & Vaughn, 1996; Lysynchuk, Pressley, & Vye, 1990) and to examine the efficacy of reciprocal teaching in different grades (Doolittle, Hicks, Triplett, Nichols, & Young, 2006; Gilroy & Moore, 1988; Gruenbaum, 2012; Kelly, Moore & Tuck, 1994; Puspita & Nuroh, 2022; Satriani, 2022; Slater & Horstman, 2002; Westera & Moore, 1995). The common aim of these research studies was to explore how strategy instruction, carried out through reciprocal teaching, affects learners’ reading comprehension and use of reading strategies.

To illustrate, in the study of Sporer et al. (2009), strategy instruction was carried out in four different ways, and it was aimed at discovering their effects on 210 elementary-school students’ reading comprehension skills and strategy use. The results indicated that the reading comprehension skills and strategy use of the participants in the reciprocal teaching group improved more, when compared to those in the instructor-guided reading condition and the control condition. Thus, it can be concluded that traditional reciprocal teaching has facilitative effects on improvement of reading comprehension and strategy use, which likewise was concluded in the study of Doolittle et al. (2006).

In a similar vein, Lysynchuk et al. (1990) carried out an experimental research study with 72 Grade 4 and 7 poor comprehenders. Both daily assessment tasks and a standardized reading comprehension test were used to investigate whether reciprocal teaching would be more successful in fostering the participants’ reading comprehension. The results were consistent with the original reciprocal teaching research study of Palincsar and Brown (1984) and that of Sporer et al. (2009), so the fact that reciprocal teaching can be effectively used

to enhance reading comprehension and strategy use of learners with reading disabilities has been supported with the findings of Lysynchuk et al.'s (1990) study.

Another study, substantiating the efficacy of reciprocal teaching, is Salataci and Akyel's (2002) study. As a research study conducted with 20 Turkish EFL learners, enrolled in a pre-intermediate level class of a one-year intensive English course, this study aimed at exploring learners' use of reading strategies both in Turkish and English and examining how strategy instruction affected reading in Turkish and English. The participants were exposed to 4-week strategy instruction, and it was found out that strategy training carried out through reciprocal teaching was useful to facilitate the use of predicting, summarizing, and using background knowledge strategies.

As a recent study in the field, Satriani (2022) investigated the effect of reciprocal teaching strategies on students' reading comprehension by teachers. The findings of the study reveal that using the reciprocal teaching strategy enhances reading comprehension, in turn, it is considered to be an appropriate and alternative method in teaching reading. The other recent research study has been conducted by Puspita & Nuroh (2022) in the Indonesian context to examine the perspectives of teachers utilising reciprocal strategy for teaching reading. The outcomes of the study yield that these strategies foster students' comprehension due to the fact that teachers guide students in grasping the entire text by developing effective skill such as summarising, questioning, clarifying, predicting, and responding what they are learning. In short, these two studies highlight the significance of "reciprocal teaching strategies" to help students master reading.

The aforementioned studies examining the possible effects of strategy training cannot be underrated. However, only Prichard and Atkins (2016) utilised a recent technology tool besides common data collection tools to discover if learners use a global reading strategy, namely previewing a text, while reading in L2. With the integration of eye tracking into the data collection procedure, they gave a new impulse to data collection, and the results revealed a lack of previewing strategy use. However, what they utilised in obtaining data is extremely encouraging for researchers who aim to combine commonly preferred data collection instruments with recent technological equipment.

## RESEARCH QUESTIONS

A study combining strategy instruction and eye tracking technology may provide useful outcomes regarding the practical implementation of a recent technological tool within an educational research study because despite its being an innovative recent study, no strategy instruction was implemented in Prichard and Atkins's (2016) study. Thus, the present research study aimed at examining the possible effects of strategy training, which was carried out by adopting the reciprocal teaching method, on improving participants' use of global reading strategies through think-aloud protocols and eye tracking and in accordance with this purpose, the following research questions were determined:

1. What is the effect of strategy instruction on the learners' attention during text processing regarding titles, introductory paragraphs, and image areas?
2. What is the effect of strategy instruction on the learners' perceived use of global reading strategies?

## METHOD

### Research Design

John W. Creswell and J. David Creswell (2018, p. 44) define mixed methods research as "an approach to inquiry involving collecting both quantitative and qualitative data, integrating the two forms of data, and using distinct designs that may involve philosophical assumptions and theoretical frameworks" and they propose four main types of mixed methods designs (i.e., convergent, explanatory sequential, exploratory sequential, and complex). The present study is designed as explanatory sequential mixed methods research because it is aimed to "have a more in-depth understanding of the quantitative data collected in the first phase of the data collection procedure" (Creswell & Clark, 2017, p. 135); hence, the overall purpose of employing this specific research design is to "explain quantitative results with qualitative data" (Creswell & Creswell, 2018, p. 372).

## Participants

To determine the participants of the present study, a reading proficiency test was administered in the first week of the 2018 – 2019 Academic Year Fall Term. The reading test was a standardised IELTS general training reading test, accessible in the Complete IELTS Bands 5 – 6.5 coursebook (Brook-Hart & Jakeman, 2012). Totally 80 students, enrolled in the Department of English Language Teaching at a state university in Turkey, took the reading test. The band scores of the students were cumulated around Bands 4 and 4,5. However, to include more proficient EFL (English as a foreign language) readers as well as less proficient EFL readers, the selection of participants was made paying regard to both homogeneity and heterogeneity. An equal number of participants from different band scores were chosen, which ensured homogeneity because each band score group was equally proficient as approved by the IELTS Reading Test. On the other hand, students from 6 different band scores were included since more proficient readers would be needed to initiate the reciprocal teaching process and less proficient readers were also chosen as participants since reciprocal teaching was already originally developed for students having certain problems in reading (Palincsar & Brown, 1986). Including both less and more skilled comprehenders provided various insights regarding the efficacy of reciprocal teaching.

As shown in Table 1, the numbers of more proficient comprehenders and less proficient comprehenders are equal and the number of participants is 23 in total. All the participants were monolingual speakers of Turkish, their ages ranged from 18 to 22, and 17 of them were female while 6 participants were male. Furthermore, even though they had been learning English for approximately 11 years, all the participants stated that they had not received strategy training previously.

**Table 1.** Distribution of Participants

IELTS Band Score	N
3	2
3,5	4
4	5
4,5	6
5	4
5,5	2

## Data Collection Instruments

### Eye Tracking Materials

Three eye tracking sessions were conducted in the current study and three different texts were utilised in these sessions. To decide on which texts would be used during the eye tracking sessions, a pilot implementation was carried out with 20 students before the procedure started. It was aimed to find out the most appropriate, reader-friendly, readable, and the least uncomfortable or disturbing texts. 5 texts were decided before the implementation. All five texts were available in the Cambridge University Press Empower B2 Upper Intermediate coursebook (Doff, Thaine, Puchta, Lewis-Jones, & Stranks, et 2015). Using these standardised reading materials ensured that the texts were at the same level. Moreover, the opinion of an expert was taken while choosing the texts and the readability scores of the texts were also calculated.

To determine the texts, a checklist, consisting of 5 short questions, was prepared by the researchers with the guidance of an expert, and the students were supposed to look at the texts and complete the checklist. The texts were selected in consequence of the results obtained through the checklist as well as Flesch Reading Ease scores and Flesch-Kincaid Reading Ages of the texts.

### Think-Aloud Protocols

Utilising think-aloud protocols with eye tracking can shed more light on the unclear points because they both attempt to clarify the unknown and vague aspects (Godfroid & Spino, 2015; Kaakinen & Hyonä,

2005; Kacar, 2018). In the present study, retrospective think-aloud protocols were administered. Think-aloud protocols were conducted one by one right after the participants read the text. In coordination with the eye tracking sessions, think-aloud protocols were also conducted three times: in the beginning, after completing the third week and at the end of the study. The participants, without the researchers' interference, thought the reading process over and stated how they had read the text. The protocols were carried out in the participants' mother tongue because the aim was to get insights into the participants' reading process and use of global reading strategies; thus, conducting them in their mother tongue would be more appropriate considering that they might have difficulty in expressing their thoughts in English.

### **Data Collection Procedure**

The present study was carried out for subsequent 10 weeks. To investigate the effects of the strategy training, data were collected three times and in each data collection, participants were supposed to participate in a think-aloud protocol and an eye tracking session. Additionally, the participants were informed about the think-aloud protocols and eye tracking previously. The purpose was to ensure that the participants were aware of the procedure as well as how the data would be collected. They were first informed about the data collection process in think-aloud protocols, namely what think-aloud protocols were, how they would perform the think-aloud protocols and what the challenges of these protocols could be. Certain short articles giving information about the procedure of think-aloud protocols and videos showing how they were conducted were shared with the participants. Furthermore, concerning eye tracking, the eye-tracking device, the appropriate sitting position and how eye tracking works were also told to the participants. However, nearly all the participants participated in an eye-tracking study before; therefore, they had already known the cruxes of eye tracking.

### **Instructional Process**

Considering the reciprocal teaching procedure, a lesson plan (see Appendix C) was prepared by the researchers taking opinions and feedback of the experts. However, in addition to paying special attention to reciprocal teaching procedure, much emphasis was also placed on global reading strategies. More precisely, in fact, in reciprocal teaching, only four main strategies were utilised while comprehending a text, but global reading strategies covered 11 strategies. Even though the four strategies overlapped these 11 strategies, it was needed to plan certain specific activities to enhance participants' use of global reading strategies. Therefore, besides the objectives related to predicting, questioning, clarifying, and summarising, three objectives were determined with the aim of improving use of global reading strategies, too. Accordingly, the activities were designed to fulfil these objectives. The same lesson plan was used during the whole study, yet in every training session, a different text was chosen and utilised. The texts were selected from the following course books: Macmillan Education Effective Reading 4 Upper Intermediate (2010), Cambridge University Press Complete IELTS Bands 5 – 6,5 (2012), Cambridge University Press Objective Proficiency (2013), and Cambridge University Press Prism Level 4 Reading & Writing (2017). To decide on the texts to be used in trainings, the interests, opinions, and feedback of the participants as well as experts' opinions were considered. Additionally, the readability scores of the texts (see Appendix D) were also calculated and the texts were included in the training sessions once positive results had been obtained.

### **Data Analysis**

In the present study, both qualitative and quantitative data analyses were required. For the analysis of qualitative data collected through think-aloud protocols, the coding scheme utilised in Salataci and Akyel's (2002) study was used. However, in accordance with the aims of the present study, certain modifications were made to the coding scheme. The coding scheme of Salataci and Akyel (2002) consists of three main types of reading strategies (i.e., bottom-up, top-down and metacognitive strategies), and 17 subcategories under these three main categories. However, because the current study focused only on the global reading strategies, a modification was needed. Within this necessary modification, the items were not altered.

Instead, the strategies that did not converge were excluded, yet the ones which met one of the global reading strategies were utilised in the analyses of the think-aloud data. To achieve interrater reliability, the think-aloud data were analysed by a different coder, too. The reliability of the findings was calculated by computing Krippendorff's Alpha-Reliability, and the results of the computation revealed high reliability ( $\alpha = .82$ ). Besides, consensus coding was utilised to analyse the content of the think-aloud data. Using consensus coding, it was aimed to ensure a high level of agreement and a robust approach to qualitative analysis (Hays & Singh, 2011, as cited in De Gagne, Hall, Conklin, Yamane, Roth, Chang, & Kim, 2019).

As for the findings related to eye tracking, a one-way ANOVA with repeated measures (RM Anova) was computed for each variable. Furthermore, descriptive statistics were calculated to provide clear pictures of the results.

## FINDINGS

### Analysis of Eye-Tracking Data

#### Initial Eye-Tracking Data Analysis

Initially, real-time heat maps including all fixations of 23 participants were generated for each eye tracking experiment (see Appendix B). In a holistic perspective, heat map intensities indicated that participants spent the most time on main paragraphs as expected. Time spent on title areas was observed to have increased over 6 weeks. A similar linear effect was not observed in introductory paragraphs. Image areas in the first and second experiment showed up less intensity when compared to 3<sup>rd</sup> experiment. For a deeper analysis, mean values for each eye tracking experiment regarding revisits and total fixation duration were given in Table 2 below:

**Table 2.** Mean Values for Aois Regarding Total Fixation Duration and Revisit Counts in 3 Experiments

Experiment	Total Fixation Duration (M/SD) *				Revisits (M/SD)	
	Titles	Introductory paragraph	Images	Title	Introductory paragraphs	Images
1 <sup>st</sup> Experiment	3/4	19/8	1/1	7/8	21/16	2/3
2 <sup>nd</sup> Experiment	5/5	17/7	1/74	18/13	21/12	2/3
3 <sup>rd</sup> Experiment	7/3	15/8	6/4	25/12	35/17	17/10

*Note.* \*Values are in seconds

Firstly, depending on Table 2, a clear increase of total time and revisits on title area was observed at the end of 6 weeks. High standard deviation values decreased in the 3<sup>rd</sup> experiment indicating that learners had an overall improvement of their eye movements on titles. Secondly, attention on introductory paragraphs decreased but surprisingly learners employed more revisits. Lastly, learners showed resistance to paying attention to image areas and low total fixation duration and low revisit values persisted until the 3<sup>rd</sup> experiment. To clarify the impact of the strategy instruction on the learners' attention during text processing regarding titles, introductory paragraphs, and image areas, each AOI was further analysed via RM Anova (see Appendix A). The findings of RM Anova implementations are demonstrated in the following section, and the abovementioned summary findings are explained and discussed in the relevant subsections.

#### Title Areas

Processing the title of a text is the initial step of reciprocal teaching since titles provide valuable clues about the content of the text. They pose questions about the content and try to internalise their existing knowledge to increase their understanding. To see the effect of the strategy instruction on title processing times, total fixation duration and revisits were analysed.

Since we observed a gradual increase in the total fixation duration and revisits on title areas, RM Anova analyses were carried out to examine the effect of strategy instruction on processing times. Mauchly's test indicated that the assumption of sphericity had been violated at  $p < .05$  level; therefore, degrees of freedom were

corrected using Greenhouse-Geisser estimates of sphericity. The results of RM Anova revealed a statistically significant difference across the three eye tracking sessions in terms of the total fixation duration on the title ( $F(1.451, 30.479) = 6694; p < .05$ ). Pairwise comparisons with Bonferonni correction indicated that there was a statistically significant difference between the first eye tracking implementation ( $M=3.34, SD=4.15$ ) and the third eye tracking implementation ( $M=7.35, SD=2.77$ ) at  $p < .05$  level. However, there were no significant differences between the first eye tracking implementation and the second eye tracking implementation, and between the second eye tracking implementation and the third eye tracking implementation.

Regarding revisits on title areas, we found a statistically significant difference across the three eye tracking experiments ( $F(2, 42) = 28.560, p < .001$ ). For pairwise comparisons, the findings showed that there were significant differences between the first eye tracking implementation ( $M=6.77, SD=7.90$ ) and the second eye tracking implementation ( $M=17.81, SD=13.07$ ), between the first eye tracking implementation ( $M=6.77, SD=7.90$ ) and the third eye tracking implementation ( $M=24.54, SD=11.69$ ), and the second eye tracking implementation ( $M=17.81, SD=13.07$ ) and the third eye tracking implementation ( $M=24.54, SD=11.69$ ).

It could be concluded from the above-reported findings that at the end of the strategy instruction, there was an apparent improvement in the time spent on the title. The participants looked at the title for a longer time during the last eye tracking implementation, and the results of the fixations indicated that they directed their eyes towards the title gradually more. Additionally, the findings showed that the relook behaviour of the participants improved in a gradual way, which can be interpreted as an encouraging finding considering the steps of reciprocal teaching. In reciprocal teaching (Palincsar & Brown, 1984; Puspita & Nuroh, 2022; Satriani, 2022), learners' attention is focused on the title area in the very beginning, and they are supposed to make predictions about the text based on the title. Guessing the content of the text beforehand activates their schemata, so their background knowledge helps them comprehend the text more easily, effortlessly, and effectively. Considering the importance of the title in the reciprocal teaching procedure, the results can be interpreted as positive outcomes regarding the efficacy of the training in developing L2 readers' use of "previewing text for content", "using context clues", "using text structure", and "using other textual features" strategies. Because the title itself can give clues about the content of a text, it is important for readers to utilise it as an aid while comprehending the text. Moreover, approaching the title as a clue to activate the prior knowledge can be useful for the comprehension process. Thus, once learners have discovered how they can use that clue profitably, they can make the L2 reading process more meaningful and easier (Marboot, 2022; Par, 2020; Rinehart, Gerlach, Wisell, & Welker, 1998).

### Introductory Paragraphs

When utilised suitably, introductory paragraphs can serve another critical comprehension aid because it is a brief and to the point summary of the text. Thus, processing time on the introductory paragraph is critical.

Contrary to expectations, while total fixation duration values on the introductory paragraph gradually decreased, revisits increased. For a more detailed analysis, RM Anova was adopted. The results revealed no significant effect of strategy instruction on total fixation duration on introductory paragraphs, ( $F(2, 42) = 2.070, p = .139$ ). For revisits, a statistically significant difference was observed ( $F(2, 42) = 9.606, p < .001$ ). Pairwise comparisons showed that there was a statistically significant difference between the first eye tracking implementation ( $M=21.47, SD=15.98$ ) and the third eye tracking implementation ( $M=34.68, SD=17.19$ ), and between the second eye tracking implementation ( $M=20.90, SD=12.35$ ) and the third eye tracking implementation ( $M=34.68, SD=17.19$ ), but there was not a statistically significant difference between the first eye tracking implementation and the second eye tracking implementation. In sum, while 6-week strategy instruction did not affect the total time spent on introductory paragraphs, it improved learners' revisit behaviour. This finding might be explained with "the time interval" (Sporer et al., 2009, pp. 279-282) because, after the six-week strategy training, the relook behaviour of the participants improved significantly.

We could not obtain strong empirical evidence suggesting that learners' attention on introductory paragraphs linearly increased over the 6-week period. The only stable finding was that learners' revisiting behaviour on introductory paragraphs developed. It could be concluded from this finding that the participants started reading the text without attaching much importance to the introductory paragraph, but when encountering something problematic or unclear, they preferred coming back to the introductory paragraph, or the



participants did not attach enough importance to introductory paragraphs because they might not distinguish these paragraphs from the main paragraphs and perceive them as the first main paragraph directly connected to the other main paragraphs. Thus, it could be suggested that “further training, which aims at training learners to decide on the most suitable strategy for a specific purpose or a specific area” is needed (Zare & Othman, 2013, p. 192). This is in line with the recommendation of Amini, Zahabi, Amini & Hosseini (2020) by stating that teachers should draw students’ attention towards the less utilised yet effective strategies to fill in the gaps in enhancing reading comprehension.

### Image Areas

For the eye tracking experiments, a homogenous number of images were placed in the texts, so the participants might find clues about the content since the images can be regarded as the most apparent context clues given in a passage (O’Neil, 2011).

We could not observe a linear increase regarding both total fixation duration and revisits on image areas. The first and second eye tracking experiments revealed similar mean values for both measures. However, total time and revisits spiked in the 3<sup>rd</sup> experiment made at the end of the instructional period. For a more detailed analysis, RM Anova was implemented. Mauchly’s test indicated that the assumption of sphericity had been violated at  $p < .05$  level; therefore, degrees of freedom were corrected using Greenhouse-Geisser estimates of sphericity. Regarding total fixation duration, a statistically significant difference was found across the time points of eye tracking implementations ( $F(1.148, 24.109) = 48.150, p < .001$ ). Pairwise comparison results indicated a significant difference between the first eye tracking experiment ( $M = 1.07, SD = 1.17$ ) and the third eye tracking implementation ( $M = 6.49, SD = 3.61$ ), and between the second eye tracking implementation ( $M = 1.10, SD = .74$ ) and the third eye tracking implementation ( $M = 6.49, SD = 3.61$ ). No statistically significant difference was observed between the first eye tracking implementation and the second eye tracking implementation as expected.

Analysis on revisits yielded similar results. The findings showed a statistically significant difference ( $F(1.095, 23.000) = 56.781, p < .001$ ) across three eye tracking experiments. Pairwise comparisons with Bonferroni correction revealed a statistically significant difference between the first eye tracking implementation ( $M = 1.95, SD = 3.03$ ) and the third eye tracking implementation ( $M = 16.81, SD = 9.57$ ), and between the second eye tracking implementation ( $M = 1.95, SD = 2.57$ ) and the third eye tracking implementation ( $M = 16.81, SD = 9.57$ ), yet there was not a statistically significant difference between the first eye tracking implementation and the second eye tracking implementation.

These findings might approve the effectiveness of the strategy training in improving the participants’ use of the “using context clues” strategy, which indeed means “using pictures, tables, and figures” as contextual aids (Bishop, Reyes, & Pflaum, 2006; Mokhtari & Reichard, 2002; Ozturk, 2018). Even though reciprocal teaching did not include a specific step that directed learners to utilise such aids to increase their understanding, the sessions carried out in the present study were planned by considering the global reading strategies as well. More precisely, objectives were added and accordingly, specific activities were included in the lesson plan. Therefore, by considering the instruction and the additions, it could be concluded from the findings that the strategy training had facilitative effects on the use of the ‘using context clues’ strategy.

### Analysis of Think-Aloud Protocols

The aim of conducting think-aloud protocols was to shed more light on the participants’ use of global reading strategies since it was clear that each global reading strategy could not be examined only through eye tracking. Thus, to find out what remained unknown in the eye tracking sessions, think-aloud protocols were also carried out. In Table 3, the findings related to three think-aloud protocols were displayed, and it was evident that frequencies of the strategies varied though some of them were reported repeatedly in all three think-aloud protocols.

**Table 3.** Frequencies of the Strategies Found in the Analysis of Think-Aloud Protocols

Strategy	1 <sup>st</sup> Think-aloud protocol (f)	2 <sup>nd</sup> Think-aloud protocol (f)	3 <sup>rd</sup> Think-aloud protocol (f)
Prediction	4	10	6
Associations with prior knowledge	4	-	-
Questioning, assessing, and commenting on the information in the text	3	-	-
Skimming/scanning reading material for a general understanding	4	15	19
Reference to the antecedent information	1	-	-
Confirmation (or modification) of prediction	-	4	1
Personal comments	-	1	1

Five strategies were found to be used by a total of 23 participants in the first think-aloud protocol, before the strategy training started. The findings revealed that the “skimming” strategy was used by four of the participants. Even though three of them stated no reasoning behind their skimming behaviour, one of the participants explained why s/he skimmed the whole text as demonstrated in the following extract:

*Firstly, I only skimmed as a global way of synthesising.* (Participant 3)

On the other hand, it was seen that four participants employed the “predicting” strategy, and the “questioning” strategy was used by three participants. The findings showed that they used the title, pictures or questions related to the text while posing questions and making predictions about the text. Considering the four strategies of reciprocal teaching, these findings could be interpreted as a welcoming start for the present study. Nonetheless, seeing that the big majority of the participants utilised neither of the strategies might support the idea that training might provide them with particular reading strategies. Finally, concerning establishing associations with prior knowledge or prior information, the results indicated that four participants drew connections between what they had already known and what the text included, whereas re-thinking over a certain part of the text was performed by only one participant. The following extract shows how the participant linked different points given in the text:

*I used the keywords there; I made connections with those words.* (Participant 12)

Although the codes found in the first and second think-aloud protocols’ analyses were basically the same, certain strategies had been employed while reading the first text but were not used in the second implementation or vice versa. In comparison with the first think-aloud protocol’s findings, it could be said that the second think-aloud protocol offered less variety regarding the reading strategies employed by the participants because only four codes emerged in the analysis. On the other hand, the results showed that there was an improvement in the use of the “skimming” strategy (f=15) and the “predicting” strategy (f=10). Nine of the participants who made predictions on the content of the text stated that they used the title while predicting what the text could be about. Because the very first step of reciprocal teaching was looking at the title and making predictions about the content, this finding was very encouraging in terms of the efficacy of reciprocal teaching in facilitating L2 readers’ metacognitive awareness of using “predicting” as a reading strategy. The results also showed that four participants addressed this strategy as a step to confirm or modify their predictions. Participant 8 explains how s/he performed this confirmation as follows:

*Then, the photos on the right directed my attention. When I did not realise that there was not a person describing a different emotion from the others, I thought that it was completely about optimism.* (Participant 8)

Hand in hand with the predicting strategy, the skimming strategy was used by the participants to foster their understanding and note characteristics of the text. Besides, the findings revealed that the participants utilised the images as well while skimming, especially to find clues about the text. As it was mentioned in the previous subheading, the images might serve as useful contextual clues, and if L2 readers knew how to use these clues effectively, they could be better L2 comprehenders and the amount of time spent understanding the problematic points in a given text could decrease. The following extract displays how participant 7 used these context clues in making connections between the title and the images:

*Firstly, before reading the text, I looked at the title, then looked at the pictures next to the text, I tried to associate the pictures with the title. (Participant 7)*

The above-given extract clarified that the participants did not use the strategies separately at all and preferred combining the strategies from time to time. To exemplify, Participant 7 employed “using context clues”, “previewing text for content” and “skimming to note text characteristics” at the same time. In this respect, it could be said that the findings of the third think-aloud protocol bore a resemblance to those of the second. To be more precise, it was seen that the participants employed certain strategies synchronously and relatedly while reading the third passage. Moreover, similar to the second think-aloud protocol’s findings, four codes were found in the analysis of the third think-aloud protocol.

The frequency of the skimming strategy was found to be 19, which was higher than those of the first and the second think-aloud protocols; thus, it could be concluded that the strategy training affected the use of the skimming strategy positively. On the other hand, whereas it was higher than that of the first think-aloud protocol, the frequency of the predicting strategy was found to be 6. However, compared to the second, the participants utilised the predicting strategy less often while reading the third text. Considering that both the skimming and predicting strategies served the same purpose, this finding could be interpreted as a promising outcome for the future use of reciprocal teaching in the L2 environments. More precisely, both strategies helped L2 readers to sustain their general understanding before they start to read. Therefore, the increase in the total frequency of these two strategies might be quite encouraging for the efficacy of reciprocal teaching in facilitating the use of global reading strategies. Furthermore, the findings revealed that a personal comment was expressed by two participants, in the second and third think-aloud protocols. Fortunately, both comments confirmed that the texts were suitable to the participants’ interests since they both stated that they liked the topic, and the texts directed their attention.

In conclusion, it might be said that the strategy training, conducted through reciprocal teaching, was beneficial to improve the use of global reading strategies, which was also suggested in the above-mentioned research studies (Alrabah & Wu, 2019; Alshammari, 2022; Deliany, 2020; Salataci & Akyel, 2002; Sporer et al., 2009). When compared the total frequency of the codes found in the first think-aloud protocol to that of the third one, it could be seen that there was an increase in the participants’ use of skimming and predicting strategies.

## CONCLUSION

Janzen (2002) starts her book chapter exemplifying two types of readers that indeed clarify why strategic reading has become more of an issue. In her well-describing examples, the focus is on adopting different approaches while preparing for an upcoming reading exam and reading a given text. From this point forth, thanks to the inspiration gained because of Janzen (2002), a further exemplification will be put forward: April is a learner of English, who is aware of her responsibilities and spends hours completing all her duties. Joy is also as hardworking as April. She likes expanding her knowledge getting the benefit of what is taught to her. When they are told that they will take a reading exam, both begin to study immediately. April takes her favourite books and starts reading various materials looking up every single unknown word. She thinks that she will be able to get ready if she memorises several words. Actually, she is not that wrong. On the other hand, Joy prefers reading in a bit different way. In her opinion, looking up all the unknown words can be time-consuming. Thus, she tries to make use of what the context gives to her. Her favourite helpers are sometimes the pictures or another word next to the unknown word. She also thinks that the way one starts reading is very crucial. She hence prefers previewing the text to see if she is familiar with the content. Bearing the findings of the current research study as well as the abovementioned

studies discussed in detail previously (Alrabah & Wu, 2019; Alshammari, 2022; Deliany, 2020; Salataci & Akyel, 2002; Sporer et al., 2009), the result of the exam is obvious.

In the present study, the underlying purpose was to provide the participants with opportunities through which they could become more strategic readers and better comprehenders. Utilising reciprocal teaching as the way of instruction, a six-week strategy training was carried out to facilitate Turkish EFL learners' use of global reading strategies. 23 freshmen, enrolled in the English Language Teaching Department of a state university in Turkey, participated in the study, and the data were collected both quantitatively and qualitatively. In a word, how reciprocal teaching would affect the use of global reading strategies was examined through eye tracking and think-aloud protocols. The whole procedure lasted successive ten weeks, but before the study started, a pilot test was implemented to decide on the texts to be used during the eye tracking sessions. What's more, a former examination was held to determine the participants. The findings of eye tracking and think-aloud protocols revealed that the participants employed these strategies more frequently after they took the instruction. Among the three eye tracking implementations, within the three areas of interest statistically significant differences were found mostly between the first and the third eye tracking implementation. The think-aloud protocols' results confirmed the betterment of the participants' strategy use. Particularly considering what the analyses revealed regarding the use of "previewing text for content" and "skimming to note text characteristics" strategies along with prediction, it might be suggested that reciprocal teaching is a fruitful way of instruction that can be used to facilitate the use of global reading strategies.

### **Implications for Teaching**

The present study was grounded in three concepts: reciprocal teaching, global reading strategies and eye tracking. Chosen as the instructional method within this study, reciprocal teaching was first formed by Palincsar and Brown 38 years ago, in 1984. When they put forward reciprocal teaching, they aimed at finding solutions for L1 readers' problems, so originally, this method was developed for less proficient L1 readers. They proposed "four strategies (i.e., summarising (self-review), questioning, clarifying, and predicting)" to help learners both monitor and foster their comprehension (Palincsar & Brown, 1984, pp. 118-121). Alternatively, Cotterall (1990, 1993) suggested that reciprocal teaching be used in ESL contexts as well. She directed the attention to the factors to be considered in ESL environments and suggested reciprocal teaching as a training method by combining metacognitive consciousness-raising and strategy training (Cotterall, 1993). On the other hand, Song (1998) was the researcher who first gave the idea of utilising reciprocal teaching in EFL environments. Like Palincsar and Brown, Song (1998) also put forward this method into consideration for less proficient readers. However, because of the four global strategies emphasised in reciprocal teaching, it could be used with more skilled L2 learners as they enabled them to foster their general understanding as well as draw more logical conclusions (Song, 1998). It was chosen as the way of instruction in the Turkish EFL context as well, and its positive impact on Turkish EFL learners' reading comprehension in L2 (Dokur, 2017; Ozturk, 2018; Pilten, 2016) along with its efficacy in fostering L1 reading comprehension (Salataci & Akyel, 2002) were confirmed within various studies. Hence, it can be suggested that reciprocal teaching be utilised in the Turkish EFL environment as well. The "predicting" strategy of reciprocal teaching enables learners to develop a general understanding and activates their background knowledge about the given topic while the "summarising" strategy facilitates their comprehension by guiding them to verbalise what they have understood in their own words. By doing so, they can draw more personal conclusions about the given texts and internalise what is delivered via the texts more effectively. On the other hand, the other two strategies, namely questioning and clarifying, provide learners with opportunities in which they can focus on their weaknesses more easily. By posing questions on the unknown or incomprehensible words and structures, learners are required to think their existing knowledge over. Moreover, accordingly, by clarifying these problematic components of the texts, they can find immediate answers to their questions. Additionally, in reciprocal teaching, the teacher shares the leading role with learners by letting them be leaders or facilitators throughout the process. In this way, learners take the responsibility of their learning and contribute to their learning process actively. Therefore, using the original sequence of reciprocal teaching (Palincsar & Brown, 1984; Puspita & Nuroh, 2022) or integrating one of the four strategies into a step of the lesson might be very useful for the improvement of learners' reading comprehension skills and strategy awareness as well as for making them better thinkers.

Global reading strategies, the second fundamental concept of the present study, were found to be employed gradually more frequently by the participants. Thus, it could be suggested that training programs, specifically designed to improve strategy use, might be to the advantage of EFL learners. Global reading strategies comprise 13 reading strategies, ranging from skimming to note text characteristics to using context clues, text structure or textual features. Throughout the training lessons of the current study, specific steps and activities were included so as to enable the participants to employ these strategies both implicitly and explicitly. Apparently, directing learners' attention to the strategies might provide valuable benefits for them. Therefore, English language teachers should plan and integrate certain activities into their courses for the betterment of learners' use of these strategies. To illustrate, as a warm-up activity of a reading lesson, the teacher can show some photos or videos related to the text to be read and discussed in the lesson and ask certain guiding questions to make predictions about the content of the text. While getting the answers of learners, he or she can form a mind-map on the board in order to make what has been put forward clear, visible and more comprehensible (Budd, 2004). Through such a warm-up activity, the use of predicting strategy, which is also one of the 13 global reading strategies, can be facilitated. After that, the teacher may guide learners to skim the whole text to find some keywords about the text and hold a whole-class discussion to produce ideas on the text. Associating the previously stated suggestions with the newly emerged ones, learners can be required to use context clues (i.e., images, figures or tables, or text structure) while skimming the text and identifying their ideas, which might accordingly foster learners' global understanding and make their reading process easier.

And last but not least, eye tracking was determined as the third fundamental concept of the present research study. Although this concept may not be utilised in classroom settings, namely while teaching one of the four language skills or other areas of the language, it can be included in research studies, which have more teaching-based purposes, as a recent data collection tool. Considering that eye tracking makes what learners perform in the process of L2 learning apparent, it can be suggested that it may be used to examine the efficacy of different teaching methods or techniques (Hyonä, Lorch, & Rinck, 2003). However, it should be noted that the research triangulation needs to be well-planned since eye tracking, alone, might not be efficient enough to find out the different aspects of what is examined.

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## REFERENCES

- Alfassi, M. (2004). Reading to learn: Effects of combined strategy instruction on high school students. *The Journal of Educational Research*, 97(4), 171-185.
- Al-Qahtani, A. A. (2021). Reading English as a foreign language: The interplay of abilities and strategies. *Indonesian Journal of Applied Linguistics*, 10(3), 580-588.
- Alrabah, A. & Wu, S. (2019). A descriptive analysis of the metacognitive reading strategies employed by EFL college students in Kuwait. *International Journal of English Linguistics*, 9 (1), 25-35.
- Alshammari, R.F. (2022). The effect of inquiry-based learning strategy on developing Saudi students' meta-cognitive reading comprehension skills. *English Language Teaching*, 15(5), 43-51. ISSN 1916-4742 E-ISSN 1916-4750
- Altalhab, S. (2019). The use of reading strategies amongst Saudi university EFL students. *Journal of Education and Learning*, 8 (3), 234-241. ISSN 1927-5250 E-ISSN 1927-5269
- Amini, M., Zahabi, A., Amini, D., & Hosseini, S. S. A. (2020). A review of reading strategies and models in learning and teaching of English as a foreign language. *AJELP: Asian Journal of English Language and Pedagogy*, 8(2), 14-26.

- Annury, M.N., Mujiyanto, J., Saleh, M. & Sutopo, d. (2019). The use of metacognitive strategies in EFL reading comprehension. *Advances in Social Science, Education and Humanities Research*, 343, 62-66.
- Ashadi, C.F. (2019). An analysis on reading strategies based on metacognitive awareness and gender. *Journal of English Teaching Studies*, 1(1), 1-16.
- Aziz, Z.A., Nasir, C. & Ramazani, C. (2019). Applying metacognitive strategies in comprehending English reading texts. *A Journal of Culture, English Language, Teaching & Literature*, 19 (1), 137-159. ISSN 1414-3320 (Print), ISSN 2502-4914 (Online)
- Bishop, P. A., Reyes, C., & Pflaum, S. W. (2006). Read smarter, not harder: Global reading comprehension strategies. *The Reading Teacher*, 60(1), 66-69.
- Brook-Hart, G., & Jakeman, V. (2012). *Complete IELTS bands 5 – 6.5*. Cambridge University Press.
- Bruce, M. E., and Chan, L. K. (1991). Reciprocal teaching and transenvironmental programming: a program to facilitate the reading comprehension of students with reading difficulties. *Remedial and Special Education*, 12(5), 44-53.
- Budd, J. W. (2004). Mind maps as classroom exercises. *The Journal of Economic Education*, 35(1), 35-46.
- Carrell, P. L. (1989). Metacognitive awareness and second language reading. *TESOL Quarterly*, 73, 121-134.
- Cotterall, S. (1990). Developing reading strategies through small group interaction. *RELC Journal*, 21(2), 55-59.
- Cotterall, S. (1993). Reading strategy training in second language contexts: Some caveats. *Aral*, 16(1), 71-82.
- De Gagne, J. C., Hall, K., Conklin, J. L., Yamane, S. S., Roth, N. W., Chang, J., & Kim, S. S. (2019). Uncovering cyberincivility among nurses and nursing students on Twitter: A data mining study. *International Journal of Nursing Studies*, 89, 24-31.
- Deliany, Z., & Cahyono, B. Y. (2020). Metacognitive reading strategies awareness and metacognitive reading strategies use of EFL university students across gender. *Studies in English Language and Education*, 7(2), 421-437.
- Doff, A., Thaine, C., Puchta, H., Lewis-Jones, P., & Stranks, J. (2015). *Cambridge English empower upper intermediate student's book*. Cambridge University Press.
- Dole, J. A., Brown, K. J., & Trathen, W. (1996). The effects of strategy instruction on the comprehension performance of at-risk students. *Reading Research Quarterly*, 31(1), 62-88.
- Dokur, K. (2017). *The impact of reciprocal teaching strategies on language proficiency of young EFL learners* (Master of Arts Thesis). Retrieved from The Council of Higher Education Thesis Centre. (Accession No: 459947)
- Doolittle, P. E., Hicks, D., Triplett, C. F., Nichols, W. D., & Young, C. A. (2006). Reciprocal teaching for reading comprehension in higher education: A strategy for fostering the deeper understanding of texts. *International Journal of Teaching and Learning in Higher Education*, 17(2), 106-118.
- Garner, R. (1987). *Metacognition and reading comprehension*. Ablex Publishing.
- Godfroid, A., and Spino, L. A. (2015). Reconceptualizing reactivity of think alouds and eye tracking: absence of evidence is not evidence of absence. *Language Learning*, 65(4), 896-928.
- Gersten, R., Fuchs, L. S., Williams, J. P., and Baker, S. (2001). Teaching reading comprehension strategies to students with learning disabilities: a review of research. *Review of educational research*, 71(2), 279-320.
- Gilroy, A., & Moore, D. W. (1988). Reciprocal teaching of comprehension fostering and comprehension monitoring activities with ten primary school girls. *Educational Psychology*, 8(1-2), 41-49.
- Grabe, W. (2009). *Reading in a second language moving from theory to practice*. Cambridge University Press.
- Gruenbaum, E. A. (2012). Common literacy struggles with college students: Using the reciprocal teaching technique. *Journal of College Reading and Learning*, 42(2), 109-116.

- Hong-Nam, K., & Leavell, A. G. (2011). Reading strategy instruction, metacognitive awareness, and self-perception of striving college developmental readers. *Journal of College Literacy and Learning*, 37, 3-17.
- Hyonä, J., Lorch, R. F., Jr., & Rinck, M. (2003). Eye movement measures to study global text processing. In J. Hyonä, R. Radach, & H. Deubel (Eds.), *The mind's eye: cognitive and applied aspects of eye movement research* (pp. 313-334). Elsevier.
- Janzen, J. (2002). Teaching strategic reading. In J. C. Richards and W. A. Renandya (Eds.), *Methodology in language teaching: an anthology of current practice* (pp. 287-294). Cambridge University Press.
- Kaakinen, J. K., and Hyonä, J. (2005). Perspective effects on expository text comprehension: evidence from think-aloud protocols, eyetracking, and recall. *Discourse Processes*, 40(3), 239-257.
- Kacar, H. (2018). *Validating multiple-text reading tasks in foreign language proficiency tests through verbal protocols and eye tracking* (Master of Arts Thesis). Retrieved from The Council of Higher Education Thesis Centre. (Accession No: 497291)
- Kelly, M., Moore, D. W., & Tuck, B. F. (1994). Reciprocal teaching in a regular primary school classroom. *The Journal of Educational Research*, 88(1), 53-61.
- Klingner, J. K., and Vaughn, S. (1996). Reciprocal teaching of reading comprehension strategies for students with learning disabilities who use English as a second language. *The Elementary School Journal*, 96(3), 275-293.
- Koda, K. (2005). *Insights into second language reading: A cross-linguistic approach*. Cambridge University Press.
- Kung, L.Y. & Aziz, A.A. (2020). An action research on metacognitive reading strategies instruction to improve reading comprehension. *International Journal of English Language and Literature Studies*, 9(2), 86-94.
- Kusumawardana, Z.R. & Akhiriyah, S. (2022). EFL university students' metacognitive awareness of reading strategy and its correlation with their reading comprehension. *Linguistics and English Language Teaching Journal*, 10(1),1-15.
- Lysynchuk, L. M., Pressley, M., and Vye, N. J. (1990). Reciprocal teaching improves standardized reading-comprehension performance in poor comprehenders. *Elementary School Journal*, 90, 471-484.
- Marboot, K., Roohani, A. & Mirzaei, A. (2020). Investigating Iranian EFL students' metacognitive online reading strategies, critical thinking, and their relationship: A mixed-methods study. *Issues in Language Teaching (ILT)* 9(1), 151-182.
- Mokhtari, K., and Reichard, C. A. (2002). Assessing students' metacognitive awareness of reading strategies. *Journal of Educational Psychology*, 94(2), 249.
- Mohseni, F., Seifoori, Z. & Ahangari, S. (2020). The impact of metacognitive strategy training and critical thinking awareness-raising on reading comprehension. *Cogent Education*, 7:1, 1720946, DOI: 10.1080/2331186X.2020.1720946
- O'Neil, K. E. (2011). Reading pictures: developing visual literacy for greater comprehension. *The Reading Teacher*, 65(3), 214-223.
- Ozturk, S. Y. (2018). Use of metacognitive online reading strategies by student teachers of English. *European Journal of Foreign Language Teaching*, 3(3), 17-32.
- Palincsar, A. S., and Brown, A. L. (1984). Reciprocal teaching of comprehension-monitoring activities. *Cognition and Instruction*, 1(2), 117-175.
- Palincsar, A. S., & Brown, A. L. (1986). Interactive teaching to promote independent learning from text. *The Reading Teacher*, 39(8), 771-777.
- Par, L. (2020). The relationship between reading strategies and reading achievement of the EFL students. *International Journal of Instruction*, 13(2), 223-238.
- Pilten, G. (2016). The evaluation of effectiveness of reciprocal teaching strategies on comprehension of expository texts. *Journal of Education and Training Studies*, 4(10), 232-247.



- Prichard, C., and Atkins, A. (2016). Evaluating L2 readers' previewing strategies using eye tracking. *The Reading Matrix: An International Online Journal*, 16(2), 110-130.
- Puspita, L., & Nuroh, E. (2022). Teacher's perspective in teaching reading comprehension using reciprocal strategy. *Jo-ELT (Journal of English Language Teaching)* Fakultas Pendidikan Bahasa & Seni Prodi Pendidikan Bahasa Inggris IKIP, 9(1), 29-37.
- Rinehart, S. D., Gerlach, J. M., Wisell, D. L., and Welker, W. A. (1998). Would I like to read this book?: eighth graders' use of book cover clues to help choose recreational reading. *Literacy Research and Instruction*, 37(4), 263-280.
- Salataci, R., and Akyel, A. (2002). Possible effects of strategy instruction on L1 and L2 reading. *Reading in a Foreign Language*, 14(1), 1-17.
- Satriani, Munawir, A., Khair, U., & Putriani, N. (2022). The impact of using a reciprocal teaching strategy on reading comprehension by prospective teachers. *ETDC: Indonesian Journal of Research and Educational Review*, 1(2), 169-175. <https://doi.org/10.51574/ijrer.v1i2.334>
- Slater, W. H., & Horstman, F. R. (2002). Teaching reading and writing to struggling middle school and high school students: The case for reciprocal teaching. *Preventing School Failure: Alternative Education for Children and Youth*, 46(4), 163-166.
- Song, M. J. (1998). Teaching reading strategies in an ongoing EFL university reading classroom. *Asian Journal of English Language Teaching*, 8(1), 41-54.
- Sporer, N., Brunstein, J. C., and Kieschke, U. L. F. (2009). Improving students' reading comprehension skills: effects of strategy instruction and reciprocal teaching. *Learning and Instruction*, 19(3), 272-286.
- Westera, J., & Moore, D. W. (1995). Reciprocal teaching of reading comprehension in a New Zealand high school. *Psychology in the Schools*, 32(3), 225-232.
- Zare, P., & Othman, M. (2013). The relationship between reading comprehension and reading strategy use among Malaysian ESL learners. *International Journal of Humanities and Social Science*, 3(13), 187-193.

# APPENDIX A

## AOIs

### 1st Experiment

**Title**  
How to survive ...  
an animal attack

**Picture 1**  
A close-up photograph of a white dog's face, looking slightly to the side.

**Text 1**  
**YOU'RE WALKING IN A FOREST WHEN SUDDENLY A WILD ANIMAL APPEARS FROM NOWHERE AND IT DOES NOT LOOK FRIENDLY. WHAT DO YOU DO?**

**Text 2**  
The first important introductory Paragraph, except hope it goes away again. With luck, you may never have to defend yourself against a wild animal, but it doesn't hurt to know what to do if an escaped weasel strikes you in your back garden, or if you're going for a country walk and you suddenly meet a family of weasels.

**Text 3**  
**BE AWARE**  
The first thing is to know which animals are really dangerous. Many people are scared of animals that are in fact harmless, and not scared enough of animals that could kill you. Most animals won't attack people unless you do something to make them angry. Bears, for example, will usually charge away as soon as they hear you and try to get away from you if you're attacking them or their young. Wolves won't normally attack unless they are very hungry, and then only if they're in a group. Donkeys are temperamental and hairy, but they aren't actually dangerous at all - you can let them walk over you. On the other hand, tigers and crocodiles are serious killers who will be happy to eat you for breakfast.

**Text 4**  
**BE PREPARED**  
It's a good idea to take a stick, a knife or a pepper spray when you go for a walk in the wild in case you meet a dangerous animal. Have it in a place where you can easily find it. It may mean the difference between life and death.

**Text 5**  
**KNOW YOUR ENEMY**  
If you've had yourself hurt by a large and dangerous animal, you'll want to know their strong and weak points. Common weak points are:  
• the nose  
• the eyes  
• the neck.  
People have sometimes succeeded by punching sharks, large cats, and crocodiles in the face, and pushing your thumbs into their eyes will also work well, as long as you possess that courage. Otherwise, you might just make them angry!  
You can also try to get a psychological advantage. Provided you seem bigger and more dangerous than the animal, it will probably leave alone, so make a lot of noise and try to make yourself look bigger.

**Text 6**  
**WHAT NEXT?**  
If scaring them doesn't work, then you have two options: running or fighting. Remember that most animals are better at running and fighting than humans, so don't expect things to end well. But if you decide to fight, fight back with everything you have. Often during animal attacks people give up before the fight has even started. If you have any sharp objects or weapons, then use them. Hit the animal's weak points, keep shouting and make sudden movements. Good luck!

**Text 7**  
**Picture 2**  
A small circular inset image showing a person's hands holding a small object, possibly a tool or a piece of equipment.

**Text 8**  
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### 2nd Experiment

**Title**  
TECH FREE!

**Text 1**  
Have you ever wondered what it would be like to give up technology? I'm a TV journalist and I spend a lot of my working life in front of a computer or a TV. I decided I would spend a day trying to manage without technological devices. What a scary thought!

**Text 2**  
I had no idea I usually do every day to reach for my smartphone to check the time and read any messages or emails. But I'd locked it away in a drawer the night before. Already I was feeling very out of touch with the world, and it was only - actually, I had no idea what time it was!

**Text 3**  
After breakfast, I needed to get some cash. Inevitably this meant a trip to the bank because cash points are everywhere. I had to queue, but I had a conversation with a woman whilst I was waiting. Not surprisingly, the bank teller thought I was a bit strange withdrawing money this way. I think she thought I was a robber!

**Text 4**  
Then it was on to the supermarket. You may be wondering what's technological about that. Well, I had to make sure I avoided the self-service check-out and joined the queue for a normal

**Text 5**  
one - with a real person. Naturally, it took longer, but I had a great chat with the guy who served me, and he told me about a new club that is opening up nearby. Would I have found out about that if I'd gone to the self-service check-out? No.

**Text 6**  
Afterwards, I came home to have a go at writing a news story by hand. Strangely, I found it easier to concentrate on my writing. But my hand and fingers got really sore! And I have to confess - by this stage, I was having to make a real effort not to get my phone out and check my messages. I was starting to wonder what my friends were doing. Maybe they were making plans to go to that new club, and I would never know!

**Text 7**  
All in all, I wouldn't say I could live without technology. Predictably, I really missed my phone all day. The worst part was not being able to check updates in the news or from my friends. I felt very out of touch. However, I kept to my promise of a tech-free day and I did have more face-to-face interaction. Undoubtedly, it made me realise just how addicted to technology we all are.

**Picture**  
A photograph of a man with short dark hair, wearing a dark shirt, sitting at a desk and looking towards the camera.

### 3rd Experiment

**Title**  
GOLDEN DREAMS AND GOLDEN GIRLS!

**Text 1**  
Too many people never realise their dreams, listing instead all the reasons why they cannot achieve them. But we had three remarkable women who never gave up on their dreams. It's their story to tell that we should all give up and say you're never too old to make your dream come true.

**Text 2**  
**DIANA NYAD - DON'T STOP SWIMMING!**

**Text 3**  
On September 1, 2013, Diana Nyad became the first person to swim successfully from Cuba to Florida. Nyad, a 71-year-old woman from Cuba in Florida, without the assistance of a shark cage. She was 64 years old. When she was only seven, Diana had an unexplained seizure that kept her from Cuba to Florida in 1976. Nyad swam for 42 hours in the water. Although she got on with her life, she returned there convinced in the back of her mind. In early 2010, she started to feel that it was time to persevere her dream again. She began training and, in August 2011, she entered the water to try again. 53 years after she first started the challenging swim. However, she had strong muscle and no stomach and had to give up after 29 hours in the water. She swam again a month later, but still wasn't successful. She waited until the following year for her fourth attempt, but pain from jellyfish stings forced her to give up. Her fifth attempt began on 13rd August 2013. After 53 hours in the water, she reached Florida and set a new world record. It was an incredible achievement, not only physically, but mentally and mentally as well, but the words of Diana, "Find a way. Never ever give up!"

**Text 4**  
**BARBARA JOE - PEACE GAVE HER A CHANCE**

**Text 5**  
At 73, Barbara has still memories hearing President Kennedy announcing the creation of the Peace Corps, a volunteer program to promote friendship and social aid to people in developing countries. Barbara has been 73 years old and she was already married, completing a degree, and she would have been too old.

**Text 6**  
Over the years, Barbara did occasional volunteer work and visited many developing countries in South America, Thailand, it wasn't until 1988 that she said herself it was now or never. She had the chance to go to the Peace Corps. She was 65. The Peace Corps she thought she had, but volunteers and

**Text 7**  
after young. The selection process is rigorous and only one applicant in ten is accepted. Barbara was by far the oldest person to be making waves. Barbara said a Peace Corps volunteer in Honduras for two and a half years and in the time she taught basic skills, she met someone, married, and became a mother and a new husband and a new father. Her daughter was born during her time. She was surprised when her husband was not too old to be a volunteer. She didn't plan to never be old to volunteer. She was never too old to follow your dream. She says, "It's never too late to become yourself."

**Picture 1**  
A photograph of a woman with short blonde hair, wearing a dark top, looking towards the camera.

**Picture 2**  
A photograph of a woman with long blonde hair, wearing a dark top, looking towards the camera.

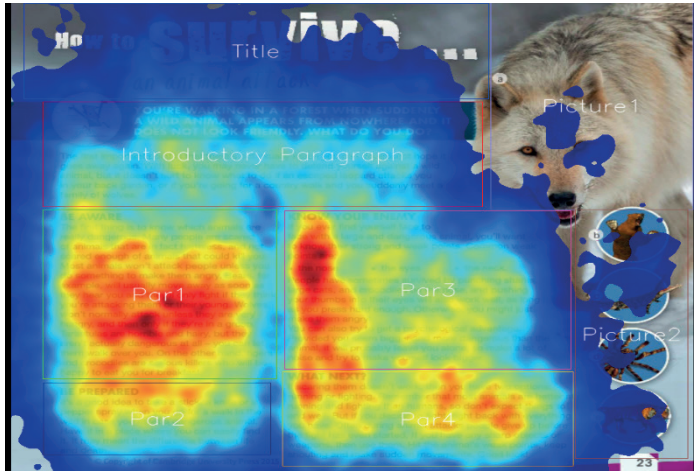
**Picture 3**  
A photograph of a woman with short dark hair, wearing a dark top, looking towards the camera.

**Text 8**  
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## APPENDIX B

### Real-Time Heat Maps

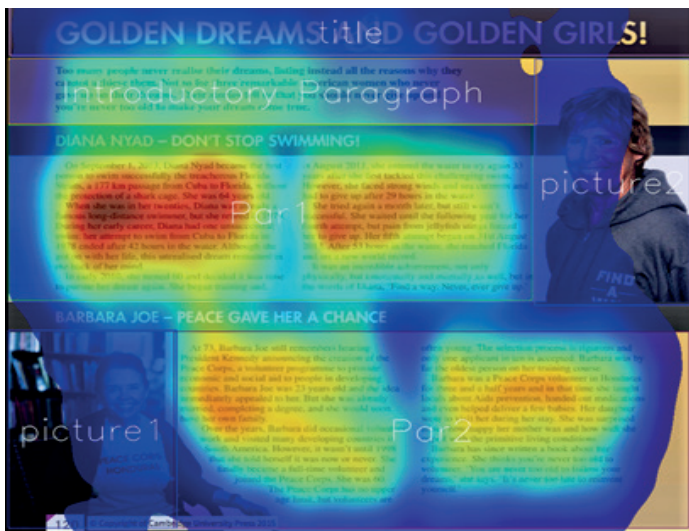
#### 1st Experiment



#### 2nd Experiment



#### 3rd Experiment



## APPENDIX C

### Lesson Plan Followed throughout the Trainings

Students: 23 first grade college students who are enrolled in the Department of ELT	
Duration: 50 minutes	
Aim: By the end of the lesson, the students will be able to comprehend a reading text.	
<p>Objectives: By the end of the lesson, the students will be able to</p> <ol style="list-style-type: none"> <li>1. state what their purpose of reading the text is.</li> <li>2. skim the text to note its characteristics like length and organisation.</li> <li>3. skim the paragraphs to make predictions on the content of the paragraphs.</li> <li>4. scan the text to comprehend contextual clues, tables, figures, pictures and typographical aids like bold face and italics.</li> <li>5. scan the text to pose questions related to the text content.</li> <li>6. interpret the text for clarification of incomprehensible points in the text.</li> <li>7. summarise the text to draw conclusions about the content of the text and the paragraphs.</li> </ol>	
Procedure:	
Pre – Reading	<ol style="list-style-type: none"> <li>1. The teacher gives the reading text (See Appendix A) to each student.</li> <li>2. The teacher and students solely look at the title of the text and make predictions on the content of the text. At this stage, the teacher encourages students to remember what they know about the possible content of the text, that is, students' background knowledge is tried to be activated.</li> <li>3. The teacher asks what their purpose of reading can be and guides them to determine a purpose and state it.</li> <li>4. The teacher asks students to skim the whole text in order to note its characteristics like length and organisation.</li> </ol>
While – Reading First Phase	<ol style="list-style-type: none"> <li>1. Students read the first paragraph of the text silently.</li> <li>2. The teacher asks students to scan the text in order to comprehend context clues and typographical aids.</li> <li>3. The teacher models how to ask questions about the paragraph and how to clarify blurred points. While posing questions and clarifying unclear points, the teacher, acting as a model, shows how to use contextual clues, tables, figures, pictures and typographical aids like bold face and italics in order to both increase understanding and identify key information.</li> <li>4. The teacher models how to summarise the paragraph and how to predict the content of the following paragraph respectively. The teacher can repeat modelling at the following stages because it may take time to make students confident about taking roles, so the teacher should be patient and pay regard to wait time.</li> <li>5. A volunteer student is asked to be the leader who will guide the same procedure: firstly, the leader lets students read the paragraph silently and asks to scan the text to comprehend context clues and typographical aids.</li> <li>6. The leader asks a leading question about incomprehensible points in the paragraph and encourages students to ask more questions.</li> <li>7. The leader seeks or provides clarification for unclear points (e.g. unknown words, problematic grammar structures that inconvenience students' understanding).</li> <li>8. The leader states the main idea of the paragraph and summarises the content of the paragraph.</li> <li>9. The leader makes predictions about the content of the following paragraph and asks a volunteer student to be the next leader. (This process continues in this way till each paragraph is comprehended.)</li> </ol>

While – Reading	<p>Second Phase</p> <ol style="list-style-type: none"> <li>1. The teacher gives the worksheet (see Appendix B), including comprehension questions related to the text.</li> <li>2. The teacher divides the class into groups of three, introduces the first comprehension activity and tells students that they will complete the table with short answers.</li> <li>3. As a group of three, students complete the table with short answers.</li> <li>4. The teacher, acting as a guide, let students check the answers all together. (The teacher can choose a volunteer who will guide the activity – that is to say, after he/she starts, a volunteer may decide on the person who will share his or her answer with the class.)</li> <li>5. After the answers of the first comprehension activity are checked, the teacher introduces the second comprehension activity, which includes 4 multiple-choice questions.</li> <li>6. Students answers the multiple-choice questions of the second comprehension activity.</li> <li>7. The answers of the second comprehension activity are checked and then the teacher introduces the third comprehension activity, consisting of more detailed and specific questions related to the text.</li> <li>8. Students answers the questions of the third comprehension activity.</li> <li>9. The answers of the last activity are checked.</li> </ol>
Post – Reading	<ol style="list-style-type: none"> <li>1. The teacher addresses the following two questions and encourage students to discuss these questions with a partner:</li> <li>2. Do you agree with the punishment the author received when he was eight years old? What would your parents do in a similar situation? What would you do if you were the parent?</li> <li>3. When the author was caught stealing at the supermarket, what did his friend Andy do? What do you think about Andy's action? What would you have done if you were Andy?</li> </ol>
<p>Back-Up Activity: A quiz prepared online through <a href="https://quizlet.com/tr">https://quizlet.com/tr</a> is used as the back-up activity. Students work in pairs and answers the questions.</p>	

## APPENDIX D

### Readability Scores of the Texts Utilised During the Trainings

Text	Flesch Reading Ease Score	Flesch-Kincaid Reading Age
Text 1	79,3	7,2
Text 2	75,4	7,2
Text 3	73,3	7,9
Text 4	76,5	8,2
Text 5	69,3	7,1
Text 6	78,9	8,3
Text 7	74,4	7,8
Text 8	66,6	7,1
Text 9	69,9	7,2
Text 10	73,2	7,8
Text 11	70,2	7,9
Text 12	71,6	8,1