

## **The Impact of Peer-Collaborative Strategic Reading and Reflective Journal Writing on Orchestrated Reading Strategy Use and Comprehension**

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### **Abstract**

Research indicates that reading strategy instruction improves comprehension. Conceptualizing strategy training as mediating reading strategy use through collaborative and reflective practices, the present study examined the combined effect of peer-collaborative strategic reading and reflective journaling on strategy use and comprehension. Data were collected from 72 ninth-grade participants, employing a pretest-posttest comparison group design, through Reflective Journals, Reading Comprehension Test, and the Survey of Reading Strategies. The experimental group (n=36) participated in strategy training, while the comparison group (n=36) had regular study hours. Reflective journals show that the experimental group improved in rationalizing the conditional knowledge of strategies, using strategy clusters, employing responsive actions, specifying the details of strategy use and verbalizing the reading process. Findings also indicate that the experimental group outperformed the comparison group in post-test in comprehension and frequency of strategy use. The findings imply that reading strategy instruction models and teachers can increase the collaborative and reflective nature of strategy training to develop students' strategic reading and comprehension.

**Keywords:** Reading strategy instruction, Peer-collaborative strategic reading, Reflective journal writing, Metacognitive awareness, Reading comprehension

Over the past decades, reading strategy instruction has garnered considerable interest given its facilitative role in comprehension (Brevik, 2019; Wu et al., 2021). While many of the strategy instruction interventions reveal the benefits of explicit teaching of reading strategies (Duke & Cartwright, 2021; Taylor et al., 2006; Yapp et al., 2021), a few studies (Brown, 2017; Brevik, 2019) have argued that explicit teaching of reading strategies can be problematic. Brown (2017) has maintained that explicit strategy instruction is not necessarily effective for striving readers due to their developing language skills. A meta-analysis (Taylor et al., 2006) also revealed that explicit strategy instruction had a negligible impact on comprehension for students with limited language proficiency.

Another problem of explicit strategy instruction is that the 'selected reading strategies' are treated as input from outside and presented in ways that may legitimize "narrow conceptions

of how people engage with texts” (Handsfield & Jiménez, 2009, p. 156). Therefore, it is argued that regular practice of strategic reading can be more beneficial to developing students’ reading comprehension than explicit teaching of new ones (Brevik, 2019; Jin et al., 2020). However, fewer studies have explored how to sustain reading strategy instruction beyond the initial explanation to provide students with opportunities to authentically use strategies over time (Brevik, 2019; Jin et al., 2020). Thus, the current study views reading strategy training as mediating reading strategy use through collaborative and reflective practices rather than explicitly teaching new strategies.

Two interrelated lines of inquiry inform the current study: 1) sociocultural mediation and 2) metacognition. Explorations from a sociocultural perspective (Donato & MacCormick, 1994; Gao & Hu, 2020; Ngo, 2019) reveal that strategy use and development are influenced by mediational means available to learners. Collaborative interactions offer learners multiple opportunities to comprehend texts in strategic ways that might not be possible without them (Boardman et al., 2018; Liu et al., 2021). Investigations on metacognition reveal that readers with higher metacognitive awareness perform better on comprehension measures (Artelt & Schneider, 2015), and students’ metacognitive awareness can be improved through reflective journaling (Chinpakdee, 2022; Rubin, 2003). While the relationship between sociocultural mediation and metacognition has been discussed in the literature (See Bråten, 1991; Cross, 2010; Fox & Riconscente, 2008), little is known about how these two can be integrated to develop strategic readers and what impact an integrated approach will have on strategic reading and comprehension. The two strands of research suggest that strategic reading and comprehension can be improved by mediating strategy use through collaborative and reflective practices. This study aimed to investigate the combined effect of peer-collaborative strategic reading and reflective journal writing on developing strategic reading and comprehension.

## **Literature Review**

### **Peer-collaborative strategic reading**

An approach combining Vygotsky’s concept of mediation and the metacognition theory serves as the theoretical framework. Vygotsky (1978) maintains that while lower mental processes (perception, attention, memory etc.) are more or less evolutionary and instinctive, higher mental functions (planning, problem-solving, learning, and evaluation, etc.) are the results of socially mediated activities. The higher-order cognitive functions are initially social and subsequently internalized as cognitive resources (Lantolf et al., 2020). These cognitive processes, including reading strategies, appear twice in a learner’s development, first between people as a social category and then within the individual as an internalized category (Vygotsky, 1978). Individuals learn about reading strategies during social interactions with peers and teachers and internalize them as cognitive functions through practice and critical self-reflection. When learners reflect on their strategic reading experiences, they can influence and regulate their strategy use to learn more effectively and autonomously.

Interactional practices influence an individual’s strategy use and development. Particularly, peer-collaborative dialogue has been reported to mediate an individual’s learning strategies (Jin et al., 2020; Liu et al., 2021). Collaborative interactions form the core of the strategy instruction models such as Reciprocal Teaching (Palincsar & Brown, 1984) and Collaborative Strategic Reading (Klingner & Vaughn, 1999, 2000). Peer-collaborative-strategic reading can be defined as participants working together in dyads or triads on a specific reading task. Peer collaborations can offer readers a cooperative context to assist each other in reading strategically and formulating and answering questions about their reading content (Jin et al., 2020; Klingner & Vaughn, 2000). When readers engage in text-based interactions, they build on and contribute to peers’ ideas to gain a shared understanding of texts (Liu et al., 2021).

Dialogue with peers during strategic reading can also trigger and develop learners' metacognitive awareness of strategy use (Cross, 2010).

While collaborative interactions are necessary for strategy development (Jin et al., 2020), more is needed to help learners read strategically because strategies appear as social categories during interactions. The transition of strategies from social to individual categories can be facilitated by providing learners with an individually-operated mediating tool, such as a reflective journal, to reflect on their strategy use. Individual readings and reflection on their reading experiences can allow learners to reflect on their application of socially learned strategies critically and understand the contextual complexities of employing reading strategies (Chinpakdee, 2022). Therefore, the present study combined peer-collaborative strategic reading with reflective journal writing to train the participants in strategic reading. Thus, it was ensured that there was a conducive learning environment for a smooth transition of the participants from collaborating with peers to self-regulating their reading strategy use. The transformation of reading strategies from the social to the individual category is known as transference from other-regulation to self-regulation. According to Vygotsky (1978), self-regulation develops when we deliberately control our attention, thoughts and strategic actions. The Vygotskian concept of self-regulation was considered to be the foundation for the theory of metacognition (Bråten, 1991; Cross, 2010; Fox & Riconscente, 2008).

### **Metacognitive awareness and reflective journaling**

Metacognition is the ability to understand and regulate one's learning and thinking. It is the knowledge about the cognitive aspects of thinking (Jacobs & Paris, 1987; Teng, 2020). In relation to reading, metacognition is the readers' awareness of the reading process and the ability to regulate and self-guide reading (Pinninti, 2016). Metacognitive awareness includes three types of knowledge: declarative (what strategies one uses), procedural (how to employ strategies), and conditional knowledge (when and why strategies are suitable) (Jacobs & Paris, 1987; Mbato, 2019; Pinninti, 2016). Studies on metacognition reveal that learners with higher metacognitive awareness perform better on reading comprehension measures (Artelt & Schneider, 2015; Schaeffner et al., 2021). Hence, it is suggested that readers' metacognitive awareness should be developed to foster effective strategic reading (Artelt & Schneider, 2015; Wu et al., 2021).

Metacognitive awareness of strategic reading can be improved by employing a reading journal as a reflective tool (Auerbach & Paxton, 1997; Chinpakdee, 2022; Rubin, 2003). Reflective journal writing can be used as a mediational tool to support readers to intentionally reflect on and evaluate their reading experience, identify the strategies that help their learning, and strategize their future reading. Reflective journaling can stimulate readers' metacognitive awareness of their reading process, thereby developing their active involvement and ownership (Chinpakdee, 2022). When readers reflect on their strategic reading through reflective journaling, they can advance in internalizing reading strategies as their cognitive functions. Therefore, journal writing has been advocated for strategy training purposes (Chen, 2009; Chinpakdee, 2022).

Journaling alone, however, may not be optimally effective for mediating reading strategy use as it mostly operates on the individual plane. For mediation to yield optimal results, it should be provided both on social and individual planes. Hence, reflective journaling must be complemented with any form of social interaction. Moreover, journaling has its challenges (Chinpakdee, 2022). For example, learners, especially younger ones, may not be familiar with reporting their self-reflections. This challenge can be addressed by employing guided reflective journals to support young readers (Chinpakdee, 2022). Written prompts can facilitate readers' reflection on their reading strategies and how and why they are using them. When learners

reflect on their reading strategies and how they are using them, they develop their declarative and procedural knowledge of strategic reading. When they reflect on why they are using strategies and when and why strategies are effective, they develop their conditional knowledge of strategic reading. Therefore, the current study incorporated prompted reflective journals to mediate participants' strategic reading in combination with peer-collaborative strategic reading.

### **Reading strategy instruction**

Research on learning strategies reveals that highly skilled language learners exhibit at least five attributes of orchestrated and effective use of strategies. First, effective users of strategies are aware of why they employ strategies and when and why a particular strategy is effective, in addition to knowing what strategies they are using (Artelt & Schneider, 2015; Schaeffner et al., 2021; Zhang, 2010). Second, they employ clusters of strategies contingent on texts and tasks (Cohen & Wang, 2018; Ikeda & Takeuchi, 2006; Zhang, 2010). Third, strategic learners write summaries and make notes (Lau & Chan, 2003; Paris & Myers, 1981; Winograd, 1984). Fourth, advanced users articulate their use of strategies with specific examples (Donato & MacCormick, 1994; Jacobs & Paris, 1987). Last, they describe their learning experiences and strategic actions fluently (Akkakoson, 2011; Ikeda & Takeuchi, 2006). Though each attribute is vital in becoming a strategic reader, combining these five qualities is the key to effective strategic reading.

Reading strategy instruction is advocated because when readers are trained in employing various strategies, they develop autonomy and become effective readers. Comprehension strategy instruction garners support from three strands of inquiry. First, research reveals that skilled readers employ strategies to comprehend texts (Duke & Cartwright, 2021). Second, correlational studies indicate a significant positive relationship between strategy use and comprehension (Muijselaar et al., 2017). Last, investigations that studied the effect of reading strategy training on comprehension show positive results (Boardman et al., 2018; Duke & Cartwright, 2021; Okkinga et al., 2018; Taylor et al., 2006; Wu et al., 2021). Moreover, a recent meta-analysis by Yapp et al. (2021) found evidence for the educational benefits of reading strategy instruction interventions on comprehension performance.

There are meaningful patterns in reading strategy instruction studies, which can be categorized into four waves (Wilkinson & Son, 2011). The first wave focused on studying the impact of teaching individual reading strategies. However, researchers soon realized that comprehension is a dynamic process involving the application of multiple reading strategies in an orchestrated way. Hence, the second wave focused on examining the effect of teaching a repertoire of strategies. During this wave, strategy instruction models like Reciprocal Teaching (Palincsar & Brown, 1984), Direct Explanation (Duffy & Roehler, 1987), and Collaborative Strategic Reading (Klingner & Vaughn, 1999, 2000; Liu et al., 2021) were proposed and implemented. As an improvement, the third wave explored the impact of a transactional approach to strategy instruction. Transactional Strategies Instruction (TSI), developed by Pressley et al. (1992), emphasizes the transactions between the text and readers and between readers and the teacher. TSI involves direct explanations about strategies, followed by instructor modeling strategies and guided practice.

The fourth wave of studies examines the effect of dialogic and participative approaches to strategy instruction. These perspectives recognize comprehension as a dynamic, context-sensitive process and suggest a dynamic approach to comprehension training (Wilkinson & Son, 2011). The advocates of these perspectives postulate that explicitly learning about a reading strategy may not help readers comprehend better, but using a variety of strategies contextually as part of their regular reading practices can help them become orchestrated

strategic readers (Brevik, 2019). Therefore, dialogic and participative approaches to strategy instruction have been recommended for regular strategic reading practice. Dialogic approaches to instruction highlight the significance of collaborative interactions among learners in the co-construction of knowledge (Klingner & Vaughn, 1999, 2000; Liu et al., 2021). Participative approaches to strategy instruction propose that regular practice of strategic reading can be more effective in developing students' comprehension than explicit teaching of new ones (Jin et al., 2020; Liu et al., 2021).

## **The Present Study**

This study examined the impact of peer-collaborative strategic reading and reflective journaling on developing strategic reading and comprehension. The concept of mediation served as an overarching framework for the above two techniques. Mediation can be provided on two psychological planes: social and individual. In the current study, mediation on the social plane was provided through peer-collaborative strategic reading, and on the individual plane, it was offered through reflective journal writing. The following question guided the current study:

1) What is the combined effect of peer-collaborative strategic reading and reflective journal writing on the qualitative nature and frequency of participants' reading strategy use and comprehension?

## **Methodology**

### **Participants and setting**

Participants were 72 ninth-grade students of a Jawahar Navodaya Vidyalaya (JNV). JNVs are residential schools managed by Navodaya Vidyalaya Samithi, a self-governing organization under the Ministry of Education, Government of India. JNVs were established to cater to the educational needs of talented rural children. The JNV at which the study took place conducts regular classes in the forenoon and study hours in the afternoon. In a typical regular class, the instructor teaches the students and in a study hour, students revise what they have learned in class, clear their doubts, and complete the exercises given by the teacher. The role of the teacher in a regular class is to transact the curriculum and in a study hour to maintain discipline, oversee the students' activities and clear their doubts. The participants were two intact sections of 36 each and were 14 to 16 years old. One section (21 boys and 15 girls) served as the comparison group (CG), and the other (22 boys and 14 girls) as the experimental group (EG). They studied English as a language subject until the eighth grade, and English medium of instruction was introduced to them from the ninth grade. They were a mixture of developing and struggling English language learners. Appropriate ethical protocols were followed and approvals were taken from the school administration. Informed consent was obtained from the participants. They were notified that the "participation in the study is voluntary" and they "are free to withdraw consent and discontinue participation in the study". They were informed that their data would be kept confidential and their responses might be published. Pseudonyms were used for the participants to maintain confidentiality.

### **Research design**

The study employed a pretest-posttest comparison group design. The pretest-posttest control group design is commonly used in educational research (Bulus, 2021), and it has been effectively employed in strategy instruction studies (e.g., Teng, 2020). The inclusion of CG can eliminate intervening variables such as *history*, *maturation* and *testing*, offering an alternative explanation for the experimental effects.

The two intact sections were randomly assigned to CG and EG. The sections were earlier divided into homogeneous groups by the school administration based on the previous year's achievement test. The homogeneity of the two groups was also corroborated by the pre-test scores, which indicated no statistical difference between the groups (see Table 5). Both sections had similar educational resources, including the teachers, the hostel, the library, the computer lab and the playground. The only difference was that CG did not participate in the strategy instruction while EG did.

### **Data sources**

Qualitative data were collected through reflective journals to understand the qualitative nature of participants' reading strategy use. Quantitative data were collected through the Survey of Reading Strategies (Mokhtari & Sheorey, 2002) and the Reading Comprehension Test that measured the frequency of reading strategies and comprehension, respectively.

**Reflective journal.** The reflective journal was employed to capture the developmental changes in reading strategy use. It was assumed that participants writing on a blank page might not report thoroughly. Therefore, typewritten prompts were incorporated in the reflective journals to channel their responses to the focus of the study. The prompts include "*I used the following strategies before I started reading*", "*I used the following strategies while I was reading*", "*I used the following strategies after reading is done*", "*The most useful strategies in understanding the text...*" and "*They are useful because...*". The prompts were used to stimulate the participants' metacognitive awareness of reading and enable them to reflect and evaluate their reading strategy use.

**Survey of reading strategies (SORS).** The SORS, a standardized tool, has thirty items to measure adolescent and adult students' awareness and use of reading strategies on a 5-point Likert scale. The survey was reported to have a reliability coefficient of 0.93 (Mokhtari & Sheorey, 2002), indicating a reasonably reliable measure.

**Reading comprehension test (RCT).** An RCT was developed to measure the participants' reading comprehension before and after the strategy instruction. The multiple-choice question type was considered for its objectivity. Another factor that guided the choice of MCQs was the practical understanding that ESL readers of the participants' age and proficiency tend to copy the passage excerpts for short answers without giving the specific answer. After developing the test, it was vetted by three field experts, and their suggestions were incorporated to improve its face validity. Then, it was piloted to ascertain the internal consistency reliability, the quality of distractors and the difficulty level of the questions. The test's internal consistency reliability was .83 (Cronbach's alpha). Any score above .8 is a *good* indicator, according to George & Mallery (2003). The piloting helped the researcher verify and improve the quality of distractors of the MCQs. Based on the difficulty level, questions in the RCT were divided into two similar sets of 22 questions each, one (Set-A) for pre-test (mean: 14.66) and the other (Set-B) for post-test (mean: 14.33).

### **Strategy Instruction Materials**

Nine texts were chosen from Widdowson (1979) and Nuttall (1996) for the peer-collaborative strategic reading sessions. The texts were selected based on their suitability for strategic reading. In the passages, supporting questions were incorporated to facilitate the reading process. Reading skills such as *dealing with unfamiliar words*, *scanning*, *skimming*, *identifying the main idea and supporting details* and *making inferences* were targeted in designing the supporting questions.

Apart from these nine texts, six—three expository and three narrative—passages were used for reflective journal writing. Key expressions were highlighted, and illustrative pictures,

appropriate titles and subtitles were incorporated into these passages to enable students to preview and predict, and to activate their background knowledge on the topic.

## **Procedure**

### **Pre-test**

The SORS and the RCT (Set-A) were administered to the participants as the pre-test. The participants were informed about the purpose of the SORS and were encouraged to respond honestly to the items. They were also informed that it is not a 'test' and that there are no 'right' answers. The participants took 25 to 30 minutes to respond to the SORS. Then, RCT (Set-A) was administered, for which the participants took 20 to 25 minutes to complete.

### **Strategy instruction**

While the instruction was conducted for EG, CG participated in independent reading of *English* material as part of the study-hour reading and was monitored by their English teacher for maintaining classroom order. The training for EG involved peer-collaborative strategic reading and reflective journal writing. The training did not target any specific strategies because participants' knowledge of familiar and new strategies was expected to develop contextually in collaborative interactions and individual reflections.

The author of the article began strategy instruction by raising participants' reading strategy awareness for about 90 minutes. This awareness-raising session differs from the direct explanation about new strategies as input. Whereas the former involves eliciting strategies from the students and making other students aware of them, the latter involves an explanation of the teacher's selected strategies. The source of strategies in the former is the students themselves, whereas, in the latter, it is the teacher. The strategies that came for the discussion include *planning, previewing, predicting, highlighting difficult words, noting important information, and problem-solving strategies like rereading, translating, reading aloud and guessing meaning from context*. The reading-strategy-awareness-raising session was organized a) to raise awareness of participants' own use of reading strategies, b) to raise their awareness of a repertoire of strategies, and c) to encourage them to adopt a strategic approach to reading.

**Peer-collaborative strategic reading.** After the awareness-raising session, as a facilitator, the researcher conducted peer-collaborative strategic reading sessions weekly twice for 90 minutes each, spread across 12 weeks. Instruction lesson units were made available to each participant in every session. The students were encouraged to form groups with different classmates in different sessions without restrictions. This flexibility in grouping allowed the participants to know how different students read, understand and interpret texts. The participants were asked to first read the entire text without bothering about the supporting questions. This was done to allow the participants to get an overall sense of the passage first and then get deeper into the text in the second reading by focusing on the supporting questions. They had lively discussions on the texts in the form of comments, clarifications, questions, and interpretations in their respective groups.

**Reflective journal writing.** The participants individually reflected, evaluated and reported their reading experience through reflective journal writing once a fortnight, in all, six times during the strategy instruction. Every time, each participant was given a passage and a reflective journal. The participants read the passage and then retrospectively recorded their strategy use in the reflective journals responding to the prompts. To support the process of reflection and reporting, they were offered contingent, written comments on their journal entries because such comments can encourage students to report more and honestly. However,

grammatical and lexical errors were not commented on since grammar and vocabulary were not the focus of the study.

### Post-test

After the strategy instruction, the SORS and the RCT (Set-B) were administered to the participants as post-test to evaluate the effect of the strategy instruction on participants' reading strategy use and comprehension, respectively.

### Data analysis

Given a large amount of qualitative data, the researcher decided to select a representative sample of participants' journals for a detailed analysis. The criterion for the selection was to include participants who attended at least five of the six journaling sessions to choose more regular participants. Twenty-four participants met the criteria. They were divided into three groups of eight each based on their scores on the RCT: high, middling and striving proficiency. Three representative participants from each group were selected, totaling nine on the whole. To avoid discrepancies in the number of reflective journals across the three groups, it was decided to include two participants who wrote all six reflective journals and one who wrote five. In the end, there were 17 reflective journals in each group, and 51 reflective journals for the entire lot. Each group's representativeness was cross-checked with the left-out members of that group for commonality in the strategy description. It was confirmed that the selected members satisfactorily represent their groups in terms of strategy description. After this filtration, reflective journal entries of three high proficiency, three middling proficiency and three striving proficiency participants were compiled for qualitative analysis. The basis for the approach to the data analysis was the synergy resulting from synthesizing Braun & Clarke's (2006) guidelines for analyzing qualitative data and Donato & MacCormick's (1994) method of data analysis. The resulting approach to data analysis was a recursive, rather than a linear, progression, although it is listed in phases in Table 1.

**Table 1. Phases, processes and products of data analysis**

S. No	Phase	Key processes	Product
1	Familiarizing with the data	Reading and identifying patterns	Identification of five preliminary strategy developmental patterns
2	Developing initial codes*	Conceptualizing codes through data-driven and inductive approach	DEC to COND, IND to INT, COG to RESP, UNSPEC to SPEC, THIN to THICK
3	Searching for potential themes	Organizing the initial codes and collating relevant data extracts	A brief description of each potential theme
4	Reviewing themes	Verifying and reviewing each theme and their relevant extracts	Confirmation of internally homogeneous and externally heterogeneous themes
5	Naming and defining themes*	Identifying and describing the essence, scope and content of each theme	Definitions of themes

\* See Table 2 for the definitions of the codes and themes



Based on the definitions listed in Table 2, another researcher independent of the study and the author separately coded the data. Then, the two codings were compared to verify the inter-rater reliability. The comparison revealed that the two raters had about 93% inter-rater concordance in the coding. The differences were then resolved by discussing and referring to the operational definitions of the themes.

**Table 2. Developed Codes and their corresponding definitions**

S. No	Code	Definition of themes
1	DEC	Declarative knowledge refers to the awareness of what reading strategies one is using.
2	COND	Conditional knowledge is the knowledge of why a reading strategy is employed.
3	IND	Individual strategic action is a strategy employed individually without combining it with related strategies.
4	INT	Integration of strategies refers to clustering a group of related strategies for a collective effect.
5	COG	Cognitive strategic processes refer to the mental processes such as memorization or remembering.
6	RESP	Responsive strategic actions refer to performing actions such as writing or underlining.
7	UNSPEC	Unspecific strategic actions are general and not detailed. For instance, it is not precise in a sentence like “I tried to remember the past” the recalling of which past one is stating.
8	SPEC	Specific strategic actions are precise and particular. For instance, “I thought of the book, The Jungle Book”.
9	THIN	A thinly descriptive report contains minimal details of the reading experience and strategy use.
10	THICK	A thickly descriptive account is a report with essential details of the reading process and strategy use.

Quantitative data from the SORS and the RCT were analyzed using statistical tools. Since the assumption of data normality was violated, a nonparametric test, Wilcoxon signed-rank test (with 95% confidence interval), was performed to compare the differences between pre-test and post-test, and CG and EG (Dalgaard, 2008). The effect size was determined according to Cohen’s (1988) guidelines: 0.10 – < 0.30 = small effect, 0.30 – < 0.50 = medium effect and ≥ 0.50 = large effect.

## Results

### Results from qualitative data

Qualitative analysis of the entries of the reflective journals revealed that EG improved in five aspects of strategy use. Table 3 shows representative excerpts from participants’ reflective journals (pseudonyms were used for participants’ anonymity) for the first four developmental

patterns and Table 4 for the last. All the extracts were copied as in the original, including structural and lexical inaccuracies. In addition to presenting these five strategy developmental patterns, this article reports EG’s gradual progression across the six reflective journal writing points. The gradual improvement was quantified by employing the published criteria for evaluating the impact of strategy instruction (Pinninti, 2019): conditional knowledge, use of clusters and responsive actions.

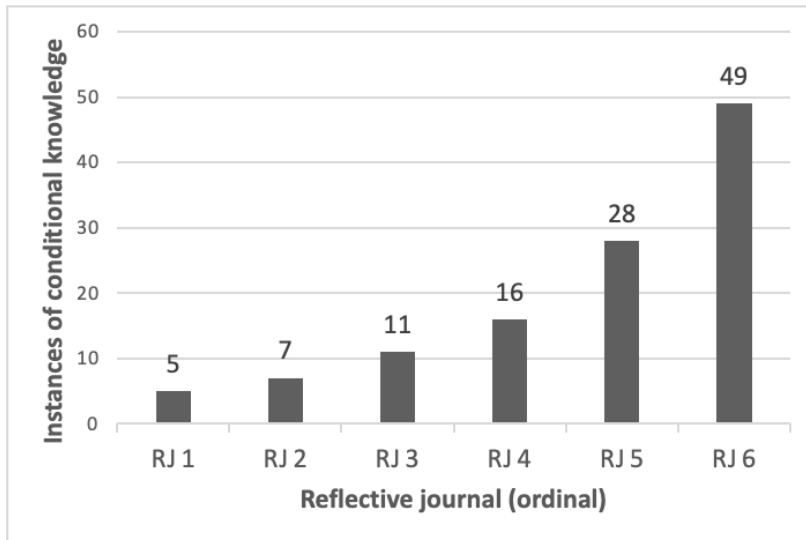
**Table 3. Participants’ progress in the first four strategy developmental patterns**

Name	First three reflective journals	Last three reflective journals	Developmental patterns
Riya	Saw the pictures.	I observed the pictures as they means pictures expresses the content in a short manner.	Declarative to Conditional
Rani	I narrated story to my friend.	I narrated it to my friend so that I can improve my understanding skills, explaining skills.	
Leena	I read very slowly line to line, word by word.	I balanced my speed of reading according to the sentences for more understanding.	
Jiya	I had drawn a sum-up of the passage.	I had drawn up a short summary as we can learn more when it is short and sweet. I had narrated the same to my friend as we can remember more if we narrate it to someone else.	Individual to Cluster
Jeet	I tried to see and understand the pictures.	When I read the title, I would try of remember the past and guess what would be in there.	
Amar	I saw the title name.	I saw the title of the text and the pictures and I guessed what about it. What they want to say.	
Riya	Recalled the summary of the text.	Summarized the text.	Cognitive to Responsive
Rani	I recalled the summary.	I wrote notes while reading passage i.e. the main points. After reading I wrote brief summary to check myself how much I remembered. Noting the main points it will help us to know what is the main idea of the passage.	
Deep	Trying to understand clearly.		
Kavya	I underlined the main sentences.	I also underlined the importance sentence like submersible was constructed in 1620 by Cornelius Drebbel etc.	Unspecific to Specific
Deep	Imagined.	Imagining the pictures of the things present in the paragraph it will help us to know that how the organisms or things will be there Ex: submarine.	
Jeet	Imagination of meaning of the word.	I remembered the film ‘Life of Pi’.	

**From declarative to conditional knowledge of strategies**

The reflective journals reveal that EG advanced from merely stating their reading strategies to articulating why they were using them. For example, the development of Jiya from stating “I narrated story to my friend” to “I had narrated the story to my friend because if we explain to someone about something we can remember it more” demonstrates their progression in conditional knowledge (see Table 3 for more examples). Moreover, as shown in Figure 1,

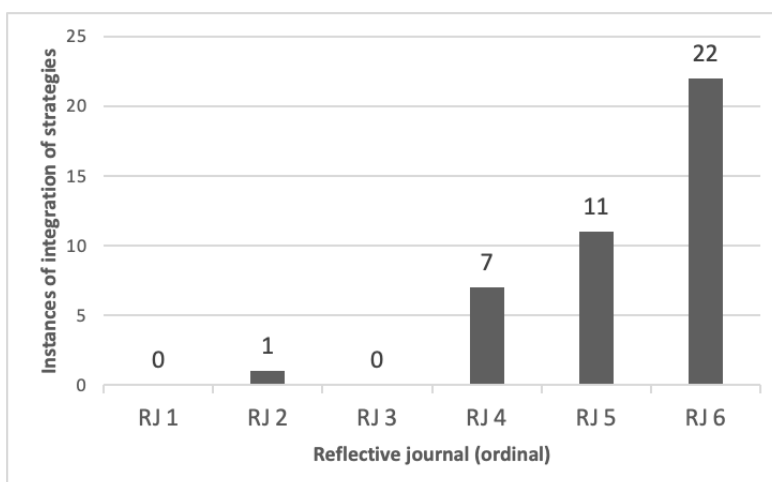
instances of articulating conditional knowledge of reading strategies have increased gradually from five in the first reflective journal to 49 in the sixth. These findings of the present study are similar to those of Auerbach & Paxton (1997). They found that their participants improved in analyzing whether a reading strategy was effective or not after critically evaluating their strategy use with the help of a strategy log.



**Figure 1. Development of conditional knowledge during the strategy instruction**

#### **From employing individual strategies to clustering them**

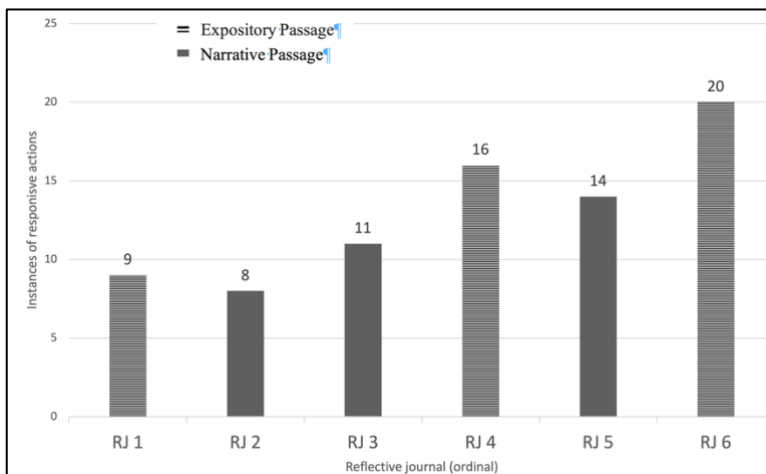
The journal entries show that the participants improved from applying individual reading strategies separately to integrating related strategies for a combined effect. The participants’ development in integrating reading strategies can be observed in the journals of Kavya, who advanced from employing “reading the title” as an individual strategy to integrating it with other associated strategies— “seeing pictures” and “reading the bold words”—to predict the main idea of the passage (see Table 3 for more examples). Additionally, Figure 2 shows that the participants’ use of clusters of reading strategies significantly increased from one instance in the first half to 40 in the second half. It can be reasoned that the participants’ engagement in peer collaborations and individual reflections might have provided them with a powerful mediating experience to form new combinations and complexes of reading strategies, thus forming new functional systems of strategies.



**Figure 2. Improvement of clusters of strategies during the strategy training**

### From employing cognitive processes to performing responsive actions

As presented in Table 3, participants' excerpts reveal that they increased their efforts to engage in responsive actions in the later phase against employing cognitive processes in the earlier phase of the strategy instruction. For instance, Rani progressed from "I recalled the summary" (cognitive process) in the initial period of the instruction to "I wrote notes while reading passage" and "after reading I wrote brief summary" (responsive actions) in the later period. Responsive actions such as summarizing and commenting are strategies employed by highly skilled readers (Lau & Chan, 2003; Paris & Myers, 1981; Winograd, 1984). Furthermore, the participants' gradual improvement in the use of responsive actions during the strategy instruction is shown in Figure 3. A glance at the figure reveals an uneven pattern in participants' use of responsive actions. However, a closer examination of the illustration considering the type of passage used for each reflective journal reveals a systematic improvement in the responsive actions. As revealed in Figure 3, the frequency of responsive actions for narrative passages gradually increases from 8 to 11 to 14 for second, third and fifth reflective journals, respectively. For expository passages, it develops from 9 to 16 to 20 for first, fourth and sixth reflective journals, respectively. These findings about responsive actions indicate that the participants could become active and responsive readers.



**Figure 3. Progress of responsive actions during the strategy instruction**

### From unspecific to specific statements

Reading strategies of the participants during the initial period of the strategy training appeared to be unspecific and unfocused, and only later did they develop greater specificity and focus. For example, the advancement of Leena from stating "I imagined the text" to stating "I imagined the submarines and recalled them that I saw in the discovery channel" exemplifies the participants' improvement from being vague in the early part of the study to being specific in the later part. Another participant, Riya, transitioned from keeping "a star mark for important" information to highlighting "the years along with the importances" and some of the names of the "important persons mentioned in the text" (see Table 3 for more examples). These extracts show that the strategic actions which were initially general developed into specific actions over time.

### From thinly to thickly descriptive verbalizations

The reflective journals revealed that the participants fluently verbalized their reading experiences and strategy use during the second half of the strategy instruction, though they were not relatively fluent in the earlier phase. All the extracts in Table 3 in general and the extracts from Riya's journals in Table 4, in particular, illustrate participants' evolution in fluent verbalization of their reading strategy use. The participants developed the ability to reflect on

and explicate their strategy use as a result of self-reflection through reflective journal writing. Reflection played a dual role in nurturing strategic readers. Reflection on the reading process not only helped the participants to organize their reading, but also improved itself as the quality of reflection improved over time.

**Table 4. Riya’s development from thinly to thickly descriptive accounts**

Stage	Thinly descriptive (First reflective journal)	Thickly descriptive (Sixth reflective journal)
<b>Pre-reading</b>	<ul style="list-style-type: none"> <li>* Characteristics of the text.</li> <li>* Read how the topic is introduced.</li> <li>* Purpose of reading.</li> </ul>	<ul style="list-style-type: none"> <li>* I checked the title first to know what is in the text.</li> <li>* I observed the pictures as they means pictures expresses the content in a short manner.</li> <li>* Observed the bold words as they may be some important words.</li> </ul>
<b>While-reading</b>	<ul style="list-style-type: none"> <li>* Underline the hard words and unknown meanings.</li> <li>* Kept a star for important points.</li> <li>* Guess the meanings.</li> </ul>	<ul style="list-style-type: none"> <li>* I underlined some difficult terms from the text so that it would be easy after reading to find meanings.</li> <li>* Tried to grasp the main idea of every paragraph.</li> <li>* I read the sentence several times for my better understanding.</li> <li>* Underlined the years along with the importances and names of some important persons mentioned in the text.</li> </ul>
<b>Post-reading</b>	<ul style="list-style-type: none"> <li>* Check whether the meanings are correct.</li> <li>* Recall the summary.</li> <li>* Asked myself some questions.</li> </ul>	<ul style="list-style-type: none"> <li>* I tried to recall the whole text and grasp the main idea of the context.</li> <li>* Tried to convert into my mother language for easy and better understanding.</li> <li>* Searched the dictionary for some difficult terms.</li> </ul>

**Results from quantitative data**

The results from the quantitative data corroborate the findings from qualitative data. As shown in Table 5, EG improved its performance from pre-test to post-test in reading strategy use from 3.33 (SD: 0.47) to 3.89 (SD: 0.36) and in reading comprehension from 13.64 (SD: 4.27) to 16.28 (SD: 3.74). Further, the results of Wilcoxon signed-rank tests showed a significant difference between pre-test and post-test scores of EG in strategy use,  $z = -5.23$ ,  $P < 0.001$  with a large effect size (0.87) and in reading comprehension,  $z = -4.51$ ,  $P < 0.001$  with a large effect size (0.75). These results indicate that the strategy instruction positively contributed to EG’s frequency of reading strategy use and comprehension.

**Table 5. Students’ performance in reading strategy use and comprehension**

Groups	Reading strategy use				Reading Comprehension			
	Pre-test		Post-test		Pre-test		Post-test	
	M	SD	M	SD	M	SD	M	SD
Comparison Group (n=36)	3.23	0.66	3.25	0.65	13.39	4.24	13.61	4.25
Experimental group (n=36)	3.33	0.47	3.89	0.36	13.64	4.27	16.28	3.74

The results of Wilcoxon signed-rank tests showed no statistical difference between EG and CG in pre-test in reading strategy use,  $z = -0.039$ ,  $P < 0.969$  and in reading comprehension,  $z = -0.051$ ,  $P < 0.959$ . These results indicate that both groups were homogeneous in terms of reading strategy use and reading comprehension before the strategy instruction. However, Wilcoxon signed-rank tests showed a significant difference between them in post-test in strategy use,  $z = -4.43$ ,  $P < 0.001$  with a large effect size (0.73) and in reading comprehension,  $z = -3.10$ ,  $P <$

0.002 with a large effect size (0.51). Based on these results, it can be reasoned that the peer-collaborative strategic reading and reflective journal writing contributed to the significant difference between the performance of EG and CG. Table 5 shows that CG performed similarly in pre-test and post-test. This similar performance of CG in pre-test and post-test supports and validates the attribution of the EG's progress in reading strategy use and comprehension to the collaborative and reflective form of strategy training.

## Discussion

A mutually informing assertion of sociocultural theory (Donato & MacCormick, 1994; Gao & Hu, 2020; Jang & Jiménez, 2011; Ngo, 2019; Vygotsky, 1978) and metacognition theory (Artelt & Schneider, 2015; Jacobs & Paris, 1987; Teng, 2020; Zhang, 2010) suggests that peer-collaborative strategic reading and reflective journal writing can be integrated to foster strategic reading and comprehension. The current study sought to verify the assertion. Results from the study's qualitative and quantitative data support the assertion. The qualitative data revealed that EG participants displayed a combination of five qualities of orchestrated strategic reading. The quantitative data revealed that the participants developed in the frequency of strategy use and comprehension. The participants' improvement in reading could be possible because their involvement in peer-collaborative strategic reading and reflective journal writing might have helped them gain insights into their reading process, thereby enabling them to perform better in reading strategy use and comprehension.

A major contribution of the present study is that it found evidence for the combined use of five attributes of orchestrated strategic reading as an outcome of strategy training. The participants improved in rationalizing the conditional knowledge of reading strategies, employing clusters of related strategies, engaging in responsive actions, articulating the precise details of their strategy use and verbalizing their reading experiences. As discussed in the literature review, highly skilled language learners possess the above five characteristics of effective use of strategies and combining these qualities is the key to orchestrated strategic reading. While these five attributes have been discussed in exploratory studies to differentiate higher-performing students from lower-performing ones, this intervention found valuable evidence for the participants' improvement in the five attributes of effective strategic reading as a result of strategy training. Previous explorations indicated that high-proficiency students differ from low-proficiency ones in conditional knowledge (Akkakoson, 2011; Ikeda & Takeuchi, 2006; Zhang, 2010), use of strategy clusters (Cohen & Wang, 2018; Ikeda & Takeuchi, 2006; Zhang, 2010), performing responsive actions such as summarising and highlighting important ideas (Lau & Chan, 2003; Paris & Myers, 1981; Winograd, 1984) and verbalizing their strategy use fluently (Akkakoson, 2011; Ikeda & Takeuchi, 2006). The current study is different from these previous studies in that it is not an exploration but an intervention to develop strategic reading and comprehension. One exception to these explorations is an intervention study by Donato and MacCormick (1994), who found strategy descriptions improving from general to specific as a result of portfolio writing. The current study's finding regarding participants' improvement in the attribute of 'specifying strategic actions in detail' is in agreement with their finding.

Reading strategy instruction interventions show that explicit strategy instruction improves comprehension (Duke & Cartwright, 2021; Okkinga et al., 2018; Taylor et al., 2006; Wu et al., 2021; Yapp et al., 2021). However, recent literature has raised the question of how to sustain strategy instruction beyond the initial explanation to make strategy use part of students' regular classroom life (Brevik, 2019; Jin et al., 2020). The current study has identified two effective practices in peer-collaborative strategic reading and reflective journal writing for providing students with opportunities to use strategies over time authentically. Peer collaborations seemed to help the experimental participants improve their comprehension and metacognitive

awareness of strategy use, as revealed in their post-test performance. Reflective journal writing, besides providing readers with an opportunity to reflect on their reading strategy use intentionally, stimulated metacognitive awareness of their reading process (Chinpakdee, 2022).

The present study attempted to reconceptualize reading strategy training as mediating strategy use through collaborative and reflective practices. This study supports previous researchers' (Brevik, 2019; Ngo, 2019) proposition to consider strategy instruction as a process of mediating students' strategic reading through collaboration with peers and critical self-reflection on their strategy use rather than explicitly teaching them new strategies. The classroom culture was designed to move beyond unthoughtful consumption to reflective re-construction and co-construction of reading strategies (Brevik, 2019). The collaborative interactions with classmates and individual self-reflections appeared to enable the experimental participants to know about new strategies and successfully refine their strategy use. As a result of this improved awareness of reading strategies, the participants demonstrated more complex aspects of effective strategy use, such as why strategies are employed and how and when strategies can be integrated. The systematic act of critically self-reflecting and reporting strategy use seemed to serve as a catalyst for constructing and reshaping the participants' reading strategies. Thus, reflection on reading and strategy use through reflective journals provided participants with a tangible tool for critically examining their reading strategy use and expanding and modifying their strategies over time.

## **Implications**

The present study demonstrated the positive effects of the integration of peer-collaborative strategic reading and reflective journal writing on orchestrated strategy use and comprehension. The following implications can be drawn for strategy instruction. However, these implications should be considered holistically rather than in isolation as they are not independent of each other.

### **Strategy instruction as an interactional practice**

Collaborative interactions in combination with reflective journal writing appeared to positively contribute to the participants' reading strategy use and comprehension. The current research supports previous studies' (Brevik, 2019; Donato & MacCormick, 1994; Jang & Jiménez, 2011) recommendation of establishing a classroom as a strategic community to present learners with more opportunities for authentic and flexible practice of strategies. Hence, involving students in interactions about their reading and the text will result in their making a variety of text-to-self, text-to-text, and text-to-world connections (Liu et al., 2021). Teachers may also interact with students about the text and the potential reading strategies they can use rather than only teaching them about new strategies (Brevik, 2019). Such discussions on reading strategies will help teachers to establish a classroom as a strategic community. Strategic community does not mean a particular strategy or a set of strategies will work equally well for all students. It means that there should be opportunities for students to discuss, share, and question their/other students' reading strategies so that they critically reflect on the strategies they use.

### **Reflection on reading strategy use**

Reflection through journal writing helped participants evaluate their reading strategy use, recognize the strategies that assisted their reading and internalize the nuances of efficient strategic reading. The current study corroborates previous research (Chen, 2009; Chinpakdee, 2022) in that it indicates the effectiveness of journaling for developing metacognitive awareness of reading. Systematic reflection on reading strategy use can help readers evaluate, modify, and regulate their strategy use depending on the context, thereby becoming critical in developing informed strategic readers. Students will also benefit by critically examining their

strategy use vis-à-vis their peers and teachers. Leaving students to reflect abstractly may not serve the purpose; instead, they may be offered concrete tools such as reading journals (Chinpakdee, 2022) or diaries (Rubin, 2003) or portfolios (Donato & MacCormick, 1994) to evaluate the effectiveness of different strategies in different contexts.

### **Acknowledging previous strategy knowledge**

The findings of the study imply that strategy instruction programs need to be designed to help students become aware of a variety of strategies they use through meaningful interactions among the students about the text, in addition to contextually introducing new strategies. It is recommended that in creating strategic learning opportunities, one needs to consider students' already existing knowledge about strategic learning and their repertoire of strategy use (Brevik, 2019; Liu et al., 2021). An effective strategy training program would adopt the metaphor of *kindling the fire* rather than *filling the vessel*. If students are introduced to new reading strategies as additions to their known strategies, they may employ them in flexible and integrated ways.

### **Limitations and suggestions for further research**

The current study has the following limitations; therefore, the results may be cautiously interpreted. First, the RCT, though it was vetted and piloted, was researcher-developed and not a standardized test. Future studies may employ a standardized test or both in replicating the study elsewhere with a larger sample. Second, the instruction was conducted by the researcher. Though this is common in practitioner research, researcher bias could have been mitigated by a delayed post-test to see if the impact of instruction persisted beyond the intervention. Third, as the central focus of the study was incorporating reflective journal as both mediational and data-collection tool and given the dynamic and social nature of reading strategies during collaborative interactions, peer-collaborative strategic reading sessions were not recorded. Recording was also not practically possible given the large number of students collaborating in a classroom. Had the recording been possible, the data would have offered insights into how students collaborated on reading tasks. Further exploration is required to understand how learners collaborate in strategic reading. Fourth, the definition of conditional knowledge for the analysis of the reflective journals is limited to the knowledge of 'why a reading strategy is employed'. Future studies may expand the definition to 'when and why strategies are effective' and explore how this aspect is impacted by strategy training.

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