

**EXPLORING RECIPROCAL TEACHING FOR ENHANCING THE READING
COMPREHENSION OF STANDARD THREE STUDENTS AT A PRIMARY SCHOOL IN
TRINIDAD AND TOBAGO: A FORMATIVE EXPERIMENT STUDY**

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Abstract: *Reciprocal teaching studies, done primarily in schools in North America and Europe, have reported reading comprehension gains for students across age and grade levels who struggle with comprehension in spite of efficient decoding. This paper reports a reciprocal teaching intervention that was implemented in Trinidad and Tobago for the purpose of improving the reading comprehension of 19 nine to ten-year-old students who had poor comprehension, in spite of good grade level decoding. The following questions were addressed: (a) What factors enhance or inhibit the effectiveness of the intervention in improving the students' reading comprehension? (b) In light of the enhancing or inhibiting factors, how can the intervention be modified to more effectively attain the goal of improved comprehension? and (c) What evidence is there of progress in the students' reading comprehension performance having engaged in the reciprocal teaching intervention? Across three academic school terms, qualitative and quantitative data were collected at the pre-, during-, and post-intervention stages. Results of constant comparative data analysis guided the study and the results of paired samples t-tests indicated statistically significant changes in the students' reading comprehension performance. The results of this study carry implications for current primary school reading programmes and the way in which reciprocal teaching fits into existing programmes in Trinidad and Tobago and the wider Caribbean.*

Keywords: *reading comprehension, reciprocal teaching, formative experiment, poor comprehension, primary schools, Trinidad and Tobago*

INTRODUCTION

An integral goal of the education system of Trinidad and Tobago (T&T) is to prepare students to fulfil their potential as critical thinkers and problem-solvers (Government of the Republic of Trinidad and Tobago, Ministry of Education, 2012). Reading

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comprehension is central to learning in school and establishes the foundation for students' future success. The ability to read with deep comprehension underscores the attainment of that fundamental goal, but there are children at the primary school level in T & T who, in spite of efficient decoding skills, have low comprehension. John and Joseph (2015) highlighted an issue of poor comprehension skills among primary school students in T&T based on 2013 National Test outcomes, and observations they made of classroom practices. Additionally, in 2006 and 2011, nationally representative data on students' reading comprehension competencies which come primarily from participation in the Progress in International Reading Literacy Study (PIRLS), documented for a large proportion of Standard Three students in T&T, a lack of higher levels comprehension skills crucial for interacting with written text beyond superficial levels of understandings (Trong, 2009).

Accompanying that reality is the challenge of numerous students transitioning to early secondary school lacking crucial reading comprehension skills needed to help them search for critical pieces of information, and progress beyond literal levels of comprehension (Government of the Republic of Trinidad and Tobago, Ministry of Education, 2012; Lewis, 2016). These are not issues restricted to T&T. The Ministry of Education of Barbados, for example, identified reading literacy challenges among their students, and reported the need for greater critical thinking skills vital to ameliorating reading comprehension and problem solving (Jones, 2008). Lewis (2016), in reporting a reciprocal teaching study done among first-year Industrial Technology Teacher Education majors at the University of Technology in Jamaica, identified weak comprehension skills as a major contributory factor in the students' difficulty in learning non-technical content and being ill-prepared to successfully cope with the challenges of tertiary education.

Being able to recognize printed words is foundational to beginning reading, however, many students who have successfully acquired early reading skills that allow them to efficiently recognize words, fall behind in performing higher-level comprehension tasks (Lewis, 2016; Oakhill, Cain, & Elbro, 2014). Although reading could not take place without the ability to decode, there is no supporting evidence that accurate and fast decoding, on its own, guarantees comprehension (Oakhill et al., 2014). Students who have age-appropriate word recognition, but who do not comprehend at age-appropriate levels have been referred to in reading comprehension literature as "word callers" (e.g., Cartwright, 2011) and "poor comprehenders" (e.g., Catts, Adlof, & Weismer, 2006). Many of them can respond accurately to *right there* (explicit level) questions, but they experience difficulty in actively monitoring their comprehension, holding in mind referentially important information, integrating information within various parts of a text to form a coherent understanding, and evaluating information. These are crucial reading skills valued universally in education as crucial to positive academic outcomes.

While there is robust research-based evidence that through the use of explicit comprehension strategies instruction or comprehension routines such as reciprocal teaching, students can be taught to interrogate text in much the same way that skilled readers do, there is a picture that suggests that such instruction is receiving little attention, and that the traditional approach to reading instruction is still quite common in classrooms.

Traditional Reading Instruction

Many teachers have held on to the less engaging traditional ways of delivering reading instruction (Harvey & Goudvis, 2013; Lewis, 2016). Internationally, there continues to be evidence that little has changed in teachers' comprehension instruction since Durkin's (1978-1979) existential description of classroom instruction (Block & Pressley, 2007). Durkin's year-long investigation of how 39 teachers at the intermediate primary grade addressed reading comprehension instruction, found minimal evidence of overt comprehension strategy instruction. Additionally, classroom discourse limited student-to-student dialogue about what was read. Typically, there is nothing in the teachers' instruction that can help the students directly learn *what* the comprehension strategies are, *how* they should actually proceed in applying the strategies, *when* they should use them, or *why* they should use the strategies. Instructional time is allotted to assessing students' comprehension in spite of a noted absence of students being taught comprehension strategies that could result in deeper comprehension of text (Block & Pressley, 2007; Onofrey & Theurer, 2007).

Within the Caribbean, Lewis (2016), in discussing the findings of his reciprocal teaching study, reported the following:

The findings of this study brought out distinctly to the researcher that the reading-comprehension weaknesses being experienced on the part of the participants are not necessarily solely the fault of the learners, but in part, the failure of their reading-instruction teachers. Reading-instruction teachers often fail to introduce their charges to strategies to enable the learners to decode, comprehend and reproduce effective, efficient and durable reading-comprehension strategies at an early stage of their academic development. Though now much more mature and experienced, none of the tertiary-level participants in the Treatment group professed knowledge or direct instruction in effective reading-comprehension strategies prior to their involvement in this study. (p.122)

John and Joseph (2015) reported in their observations of classroom practices in T&T that both in-service and pre-service teachers continue to adhere to whole-class reading instruction that is dominantly teacher-centred, with students receiving little to no explicit strategies instruction. Given that children with low comprehension skills

experience challenges in learning from written text, and that acquiring knowledge through the process of reading becomes an increasingly crucial skill as students move through the primary school system, it seems likely that if no intervention is implemented to address their comprehension needs, they will be at a disadvantage. The students who participated in this study needed an intervention that would help them make a shift from decoding to reading with a higher level of understanding. Reciprocal teaching was designed by Palincsar and Brown (1984) to help students make such a shift.

The Reciprocal Teaching Approach

Reciprocal teaching provides support to students to develop comprehension within the context of collaborative discussions based on written texts (Duke & Block, 2012; Lewis, 2016). This strategy training framework has been used with poor comprehenders with remarkable success, and teaches students to co-ordinate predicting, clarifying, questioning, and summarizing which are among the comprehension-fostering and comprehension-monitoring strategies used by proficient readers (Lewis, 2016). Students use the four strategies to engage in discussion about text, thereby jointly constructing understandings of the text. Reciprocal dialogues and a dialogic approach to instruction, mediate pedagogical rigour and intellectual demand, and both factors are present in reciprocal teaching.

Theoretical Framework

Socio-cultural theory pertaining to learning constituted the foundation of this intervention and provided well-structured guidance for its implementation. The process of using predicting, summarizing, clarifying and questioning to bring meaning to written texts, engages the students receiving reciprocal teaching training in interactive social learning through collaborative dialogues. Within a Vygotskian perspective, language is viewed as a mechanism for thinking and learning. Consequently, the social and verbal interactions between students who are attempting to use comprehension strategies to understand reading selections are a mechanism for mediating and even restructuring the meanings students generate as they read.

Reciprocal teaching is embedded within a larger context of explicit comprehension instruction that puts into operation three fundamental premises of socio-cultural theory (Vygotsky, 1978, 1986). The first premise is that children learn to use language as they engage in dialogue to guide their thinking, but they also need scaffolding instruction for optimum learning (Palincsar & Brown, 1984). The second premise is that student support within the zone of proximal development is essential for progressive development (Vygotsky, 1978). The third premise is that students develop the capacity for use of the comprehension strategies through social interaction with a more

knowledgeable *other* who initially assumes responsibility for explicit instruction, but gradually releases control to the learner (Palincsar & Brown, 1984; Pearson & Gallagher, 1983).

Purpose and Research Questions

The reciprocal teaching intervention implemented in this study was done for the purpose of improving the comprehension of students who had good decoding, but low comprehension. The researcher also sought to (a) understand what factors enhanced or inhibited the effectiveness of the intervention and (b) determine what modifications were needed to overcome any inhibiting factors. This paper reports significant findings to the following questions:

1. As the intervention is implemented, what factors enhance or inhibit its effectiveness in improving the students' reading comprehension?
2. In light of the enhancing or inhibiting factors, how can the intervention be modified to more effectively attain the goal of improved comprehension?
3. What evidence is there of progress in the students' reading comprehension performance?

METHODOLOGICAL APPROACH

This is a formative experiment study that utilized a mixed-methods approach. Formative experiment is a process-oriented approach to classroom research that recognizes that authentic classroom life produces unexpected developments and focuses not on controlling those developments, but on making the intervention work in the face of those developments. Within the literacy education research landscape, formative experiments are not yet as common as traditional experimental or naturalistic studies. However, Bradley, Reinking, Colwell, Hall, Fisher, Frey, and Baumann (2012) highlighted that this approach has attracted interest from scholars seeking to:

understand the components of an instructional intervention that are critical to success, as opposed to simply determining that one intervention works better than another or that a certain instructional move produces desirable results. (p. 411)

This methodological approach allowed the researcher to collect and analyse data iteratively, and to work collaboratively with the two teacher-participants, to make modifications in response to threatening factors at a time when adaptations would have

made the greatest difference to the student-participants, namely, while the intervention was in progress.

Ethical guidelines recommended by Miles and Huberman (1994) were followed. These guidelines included: (a) providing full information to the participants about what the study involved, (b) obtaining consent for participation, (c) assuring the participants of anonymity and using pseudonyms to protect the identity of the participants, and (d) using member-checks to allow the participants to verify interpretations and conclusions.

Design of the Study

Literacy researchers have conducted formative experiments in several phases (e.g., Ivey & Broadus, 2007; Reinking & Bradley, 2008). Four distinct phases were used in planning and conducting this study. Table 1 identifies each of these phases.

Table 1

The Phases and Time-line of Events

Phase 1	Phase 2	Phase 3	Phase 4
May 2012 – June 2012	September 2012- mid October 2012	Mid. October 2012- March 2013	March 2013 – May 2013
Preliminary meetings and planning the intervention	Gathering baseline data	Implementing the intervention	Gathering post-assessment data

Setting

This study was conducted in two Standard Three classrooms at one primary school located in an urban district in Trinidad and Tobago.

Participants

Nineteen students and two teachers of those students participated in this study. The two teachers, Mr. Grayson and Mr. Mark (pseudonyms), volunteered to participate in the study. Purposeful sampling was used in the selection of students who fit the criteria of having Standard Three level decoding, but below Standard Three level comprehension.

Data Collection Methods

Identifying and understanding what factors enhanced or inhibited the effectiveness of the intervention and how the intervention might be modified during the intervention were answered through the following qualitative methods: one-on-one interviews, reviews of teachers' journal entries, and student work samples and exit cards. Measuring comprehension gains was done through quantitative methods and included reviews of Qualitative Reading Inventory-5 (QRI-5) (Leslie & Schudt Caldwell, 2011), researcher-developed comprehension tests, and student work samples and exit cards for numeric information.

Instruments

A *teacher reflective journal* was used by the teachers to record what they thought were "Nuggets" and "Lumps". *Nuggets* were considered to be those things that went well or worked within the lesson and *lumps* were those things that the teacher felt did not work and needed to be revisited. Those entries served as crucial information in identifying the factors that were inhibiting or helping the effectiveness of the intervention. Written recommendations by the teachers for changes to future sessions aided in making decisions regarding what modifications would be implemented.

One-on-one teacher interviews were done. Each interview lasted twenty-five to thirty minutes on average. Semi-structured interview questions were used, and when responses that needed further probing emerged during the course of the interview, the researcher followed up with probing questions. The researcher reread each transcribed interview and presented a copy of the transcription to the respective teacher-participant for the purpose of member checking.

Student work samples of completed prediction, clarifying, summarizing, and questioning worksheets as well as their written answers to text explicit (Right There), text implicit (Think-and-Search), and script implicit (On-My-Own) questions were collected and analysed.

Student exit cards were used formatively to elicit written feedback.

Conferencing anecdotal notes were made by the researcher. During the conferencing sessions, the teachers and researcher discussed what worked and what did not work, as well as, what we would have liked, reviewed data on students' performance, and discussed possible modifications to the intervention. The researcher wrote brief notes to document, for example, what went well, inhibiting factors, and suggestions regarding adaptations to an upcoming lesson.

The *Qualitative Reading Inventory -5* (QRI-5) (Leslie & Schudt Caldwell, 2011) was used to collect information on student-participants' decoding, automaticity, and reading comprehension level and was administered to all 19 students at pre- and post-intervention stages of the study. The grade level difficulty of all passages was determined by Leslie and Schudt Caldwell (2011) using readability formulae, lexiles, and Fountas and Pinnell's (2006) Guided Reading Levels. The QRI-5 offers (a) open-ended explicit and implicit level comprehension questions that require short answers and (b) unaided retelling where the number of ideas recalled is assessed against an idea checklist provided for each passage as two assessment measures of reading comprehension. Leslie and Schudt Caldwell (2011) reported .99 as the alpha reliability score for total miscues, .99 for meaning-miscues, .98 for explicit comprehension, and .98 for implicit comprehension.

Researcher-constructed comprehension tests were constructed using the Pearson and Johnson (1978) classification scheme and were administered to all 19 students at the pre-, during-, and post-intervention stages of the study. Each test consisted of three textually explicit, four textually implicit, and three script implicit questions. Textually explicit questions are answered through the simple recall of information provided in the text. Responding to textually implicit questions requires the reader to search for information in various parts of the text to infer relationships between or among them. In answering script implicit questions, the inferences are drawn primarily from the reader's background knowledge.

Overview of the Intervention

Stage one of the intervention was the strategy introduction stage. Fifteen 40-minute sessions were done across a six-week period to introduce predicting, clarifying, questioning, and summarizing, one at a time. The students experienced repeated cycles of modelling, guided practice, and many opportunities for independent practice. Students received on-the-spot feedback during guided practice of strategy use, and exit cards were used to formatively elicit student feedback. At Stage two, reciprocal teaching dialogues were introduced. Twenty-four sessions were done across a nine-week period. Six sessions were during-intervention testing sessions, and 18 sessions were reciprocal teaching sessions where the student-participants read and learned to pull the four strategies together through dialogues.

The researcher and teachers scaffolded students' use of the four strategies by modelling, guiding, and applying the strategies to actual reading tasks, and mediated students' small group discussions. As the students engaged in collaborative dialogues, they asked clarifying questions, made and verified predictions, summarized chunks of text, and provided feedback to each other. All sessions were done during the scheduled reading

comprehension block of time indicated on the class time-table. The practice at the school was that all students were required to participate in those sessions. Consequently, all Standard Three students in each class were included in receiving instruction, however, only the data from the 19 student-participants formed part of the analysis in this study. As a factor which threatened the effectiveness of the intervention was encountered, an adaptation was implemented in response to that factor, and post-modification data were collected and analysed to determine the effect(s) of the modification. During the implementation phase of the intervention, the researcher took on the role of coach and provided modelling of the instructional practice, followed by guided practice where the coach and teacher assumed joint responsibility for delivering the session, and then independent teacher practice where the teacher assumed full responsibility for facilitating the session.

Data Analysis

Qualitative Method

A data reduction procedure recommended by Miles and Huberman (1994) which involves first- and second-cycle coding, jottings, and matrix displays was followed in analysing the qualitative data.

First Cycle Coding

Descriptive coding

The researcher attached a word or short descriptive phrase that summarized the basic topic of a chunk of qualitative data, for example, a chunk of teacher speech made during an interview. Chunks with similar codes were then extracted to describe certain events or actions.

In vivo coding

Certain words or phrases uttered directly from the participants' own language in, for example, the interview transcript data records were used as codes. Those codes were placed in quotation marks to differentiate them from the descriptive codes. Specific words that were used repeatedly by participants pointed to regularities or patterns and were good leads.

Evaluation coding

This method was used to tap into the participants' experiences of the intervention from their perspectives. Codes were applied onto data from, for example, student feedback exit cards that assigned judgments about, for example, the significance or merit of a session. Descriptive and In Vivo codes were applied to and supplemented the

Evaluation coding. A (+) symbol was used before a code to tag it as a positive evaluation and a (–) symbol before a code tagged it as a negative experience. Sub-codes which came after primary codes and a colon were assigned to add detail to entries.

Second Cycle Coding

Pattern coding

The researcher approached the patterning of the First Cycle codes by code type. For example, student negative and strong emotions expressed in exit card feedback threatened the effectiveness of the intervention and led to certain modifications being implemented. Consequently, the researcher assigned EMOTIONS as a pattern code and later enhanced that code to NEGATIVE EMOTIONS. The researcher returned to the research questions as a way of remaining cognizant of what was important, and then reviewed the data segments that carried those codes. At times, coding was interspersed with jottings.

Jottings

The jottings were handwritten notes the researcher made in the margins of hard copies of data. Those jottings were of emergent reflections or inferences on, for example, personal reactions to a participant's remarks, and even a mental note to clarify a prior event that emerged as significant.

Matrix Displays

The codes were tabled into matrix displays for further analytic purposes. Miles, Huberman and Saldaña (2014) described matrix displays as a way of organizing “the vast array of condensed data into an “at-a-glance” format for reflection, verification, conclusion drawing, and other analytic acts” (p. 91). The researcher used the First Cycle and Pattern codes and developed the matrix displays according to the research questions or needs of the study.

Quantitative Methods

The students' comprehension accuracy scores were plotted on a line graph for visual analysis, per individual and group means, to determine progress in comprehension performance. The data were analysed using descriptive statistics for comprehension scores. The Statistical Package for the Social Sciences (SPSS) was used. Paired samples *t*-tests of the pre-post comprehension accuracy scores and unaided retelling scores were done to determine whether there were statistically significant differences in reading comprehension performance at the 0.5 level of confidence.

Establishing Trustworthiness

Ever present in the researcher's mind was the importance of accuracy in representing and presenting the data analyses in a trustworthy way. The use of triangulation, member checking, feedback from the participants, teacher engagement in data analysis, and sharing and discussion of findings, assisted in avoiding a possible bias effect stemming from the researcher's dual role in this study (Miles & Huberman, 1994; Miles et al., 2014).

Trustworthiness of the quantitative data was achieved through establishing the readability level of each passage as well as question-type reliability and scoring reliability. Two external raters verified that each passage was at a Standard Three level. Question-type reliability of the researcher-developed tests was established at 100% by two independent raters. Scoring reliability was established at .93 (for the researcher-developed tests) and .96 (for the QRI-5 comprehension tests) by two external raters.

FINDINGS

Inhibiting Factor One

Challenges encountered with questioning emerged as a clear theme at stage one of the intervention. In spite of the modelling and guided practice the teachers and researcher provided, students experienced difficulty in generating *Think-and-Search* and *On-My-Own* questions (the two critical thinking questions). The dominance of superficial questions suggested they had not gone beyond superficial understandings of the texts and this posed an initial obstacle to generating high quality discussions in the groups. Similarly, the theme *difficulty in posing Think- and- Search and On- My-Own questions* clearly emerged out of the analysis of the students' exit card feedback data. Additionally, the teachers attested to challenges encountered by the students. For example, Mr. Grayson shared the following reflection:

I'm concerned that what they are producing are mostly literal level questions. Is it that when they are reading they're really paying attention to what is readily obvious? Maybe that is why that is all they are coming up with. I'm not sure about that, but I'm sure I want them to go deeper and to be able to work through the text on their own. I'm not saying the strategy isn't working but, as it is right now, they seem to be stuck on the easy questions. I think I've done what I expected of myself but the support I've provided when I did predicting and clarifying doesn't seem to be enough this time. Maybe a different kind of support is needed to do questioning. (Mr. Grayson/Journal Entry/November 2012)

Inhibiting Factor Two

Challenges encountered with summarizing emerged as another clear theme. In spite of the modelling, guided practice, and supportive feedback at Stage One of the intervention, the summaries produced by students were basically word-for-word retellings of the focal texts. The students included some unimportant points along with a few of the key ideas instead of providing most or all of the supporting details and excluding all non-important points. Students themselves indicated they felt summarizing was difficult and *boring, and dislike for summarizing* clearly emerged as negative evaluations.

Modification One

Implementation of question starters

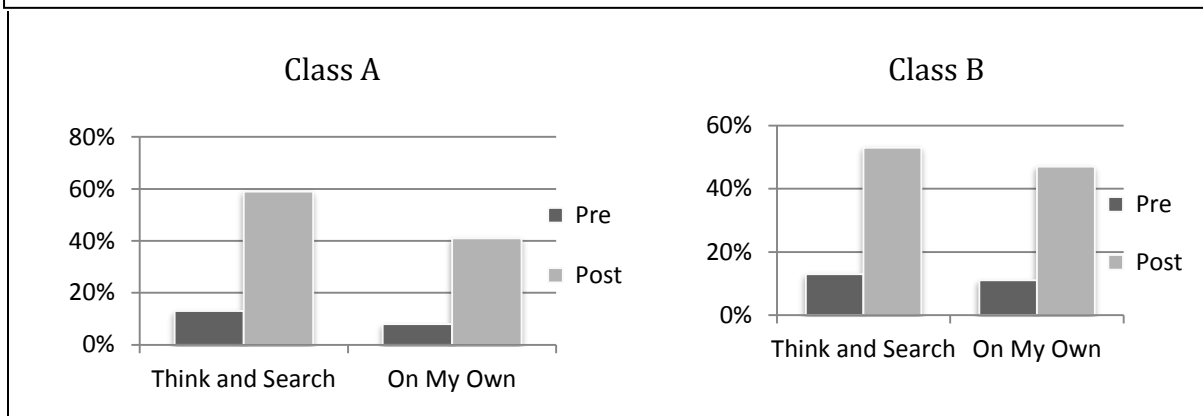
In response to students' difficulty in generating *Think-and-Search* and *Own-My-Own* queries, question starters were introduced to scaffold their posing of these two question types. The students responded favourably.

Post-modification exit-card feedback from the students indicated a shift from negative to positive perceptions and an increased sense of self-efficacy in using the strategy. The teacher-participants also offered positive attestations to the effectiveness of the modification. This is exemplified in the following journal entry:

The prompts helped my students to focus their attention on forming the kinds of questions I wanted them to ask. I know I didn't imagine that they did more talking than I did during guided practice. To say that I was pleased is an understatement. They were quickly able to formulate their questions. I think I'm salting the oats, and this is exciting. (Mr Grayson/Journal Entry/ November 2012)

There was also numerical evidence of sizeable increases in the number of *Think- and -Search* and *On- My-Own* queries posed by the students at post-modification. Figure 1 shows the pre- and post-modification difference in performance in generating the two question types.

Figure 1. Pre-post Comparison of Proportions of Question Types Produced



That comparison showed the sizeable progress made in the students' ability to pose the two question types after the modification was implemented.

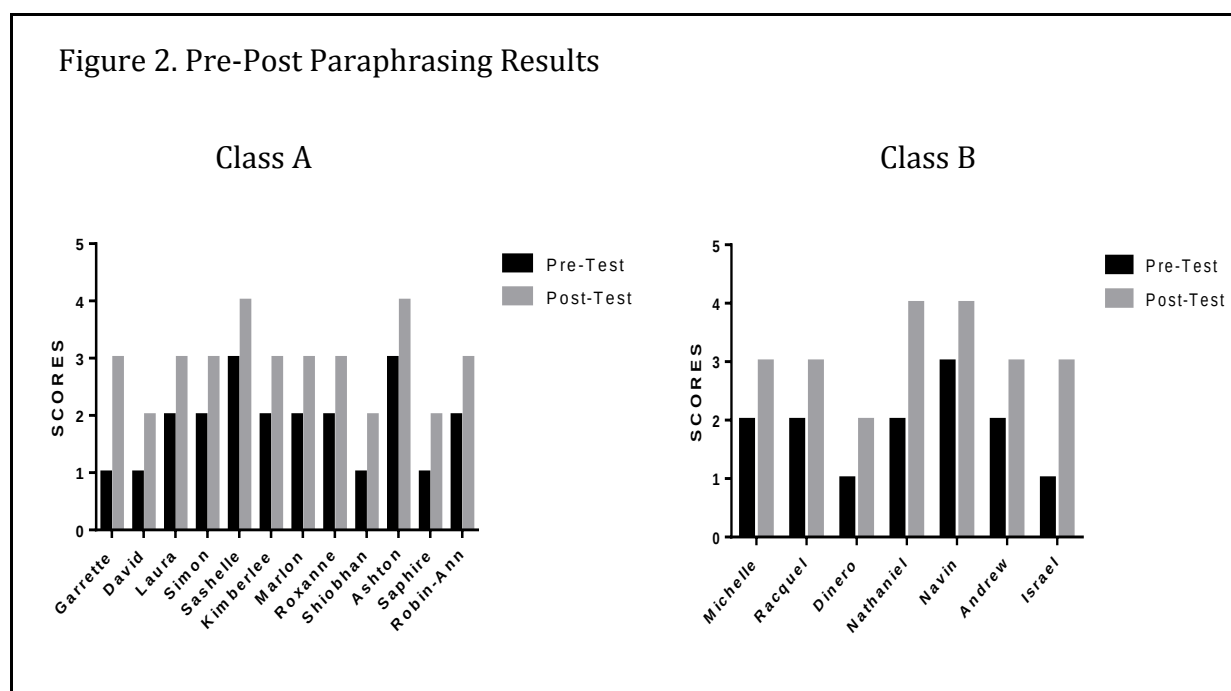
Modification Two

Implementation of Comic Strip Summary

Comic Strip Summary (CSS) mini-lessons were done as an innovative way to (a) motivate student interest; (b) assist students in utilizing their existing strength in identifying main ideas and organizing information in a logical sequence; and (c) hone students' skills in recognizing important points, and explaining their comic strip concisely and in their own words as much as possible. The students responded favourably.

The post-modification data showed an increase in the mean for the group of students in Class A and Class B. Figure 2 shows a pre-post comparison of those students' performance in the previous key area of difficulty, namely, paraphrasing.

Figure 2. Pre-Post Paraphrasing Results



The paraphrasing mean for the student-participants in Class A moved from 1.8 at pre-test to 2.9 at post-test. Similarly, there was an upward shift in paraphrasing mean for the students in Class B from 1.8 at pre-test to 3.1 at post-test. That upward shift suggested strengthened performances in paraphrasing. Additionally, students' post-modification exit-card feedback indicated a shift from negative to positive perceptions and an increased sense of efficacy for summarizing.

Factors that Enhanced the Effectiveness of the Intervention

Effective use of the strategies and *high quality of dialogues* emerged as clear themes in the analysis of data at stage two of the intervention. After the particular modifications were implemented, the students entered into the dialogues with good familiarity of the strategies. They demonstrated greater sophistication with the use of the strategies through the high quality of their discourse. While there was a decrease in statements requiring clarifications, the student dialogue transcripts revealed that the students made a variety of statements that indicated their use of comprehension strategies that were part of the training activities.

Critical Statements

Critical statements indicating the students were monitoring their comprehension were evident. For example, Marlon indicated, "*When I first read 'multiracial society', I wasn't too sure I understood what it meant.*" Other critical statements included comments

made about a peer's answer, question, or summary. For example, when Robin-Ann provided an incorrect answer, "Ancestors", Simon responded with:

I don't think that is correct because to me ancestors mean like your family that came before you like your parents, grandparents, and even those older than that, so the descendants will be like the children of the older set... like the children of the ancestors.

Predictive Statements

Predictive statements were also evident. For example, Marlon read the title of the passage *How Our People Came* and made the following prediction about the content of the reading material:

I predicted that we would learn about the different groups of people who live in our country and we would get information about where they used to live before, like Africa, China, and India, before they came here to live.

There was also evidence that students were reading for the purpose of verifying the accuracy of their predictions. This is illustrated by the statement:

Yes, it was correct because the paragraph mentioned our multiracial society and some of the places outside of Trinidad and Tobago where the people who live here came from.

That statement was Marlon's response to Simon who had earlier asked him whether his prediction was accurate.

Main Idea Summary Statements

Main idea summary statements that indicated the students were sifting important information from superfluous details were also evident. Such statements grew in accuracy as they gained further facility with the strategy. Examples of such statements were Simon's accurate offering of, "*I think the most important point is that our country is a multiracial society.*" Marlon accurately summarized, "*My summary is that our country is made up of many different races of people.*" Instances where students offered summary statements that included the main idea, but also included some supporting details were very few.

Evidence of Progress toward Improved Reading Comprehension

This section presents significant findings regarding students' improvement in comprehension performance as measured through their accuracy in answering comprehension questions and unaided retelling.

Growth in Comprehension Performance on the QRI-5 Measure

Students' performance across Classes A and B yielded results at post-test that were statistically significant. Table 2 shows the gains made in comprehension accuracy on the QRI-5 comprehension passages.

Table 2

Pre-Post Comprehension Performance on QRI-5

QRI-5 (Leslie &Schudt Caldwell, 2011)	M		SD	
	Class A	Class B	Class A	Class B
	N=12	N=7	N=12	N=7
Pre-test	3.87	3.92	.433	.607
Post-test	7.33	7.21	.536	.698
Gain	+3.46*	+3.29*		

Note. * $p = .0001$

The QRI-5 post-test data showed an increase in the mean score for each student-participant. The mean accuracy in comprehension performance on the QRI-5 between the pre-test and post-test differed greatly with $p < .001$ which not only indicated growth in their ability to accurately answer comprehension questions, but that the improvement made was statistically significant.

Growth in Performance on the Researcher-Developed Tests

Each student's mean accuracy increased from his or her baseline mean. Paired samples *t*-tests analyses confirmed that the gains made from baseline were statistically significant. Table 3 shows the gains made in comprehension accuracy on the researcher-developed comprehension tests.

Table 3

Pre-Post Comprehension Performance on Researcher-developed Comprehension Tests

Researcher-developed comprehension tests	M		SD	
	Class A	Class B	Class A	Class B
	N=12	N=7	N=12	N=7
Pre-test	6.50	7.00	.674	.577
Post-test	16.75	17.00	1.06	1.15
Gain	+10.25*	+10.00*		

Note: * $p = .0001$

The mean accuracy between the baseline and post-intervention phase differed significantly with $p < .001$. Therefore, it was concluded that the students made significant progress in strengthening their comprehension skills.

Growth in Unaided Retelling of Main Ideas

Across Classes A and B, the post-test data showed an increase in the means for the retelling of main ideas which indicated stronger performances. Paired samples t -test analyses confirmed that the gains made were statistically significant. Table 4 shows the gains made in the retelling of main ideas.

Table 4

Pre-Post Main Idea Retelling Comprehension Performance

Main idea retelling-QRI-5 (Leslie &Schudt Caldwell, 2011)	M		SD	
	Class A	Class B	Class A	Class B
	N=12	N=7	N=12	N=7
Pre-test	1.41	1.42	0.51	0.53
Post-test	4.33	4.00	0.65	0.81
Gain	2.92*	2.58*		
	$p = .0001$	$p = .0004$		

The increased inclusion of gist ideas in the retellings of all student-participants suggested an increased focus was placed on understanding key ideas as well as increased use of summarizing, both of which were central reciprocal teaching activities in this study.

Growth in Unaided Retelling of Details

There was an increase in the mean from pre- to post-test which indicated stronger performances in retelling of details. Table 5 shows the gains made in the retelling of details.

Table 5

Pre-Post Details Retelling Comprehension Performance

Details retelling- QRI-5 (Leslie & Caldwell, 2010)	M		SD	
	Class A	Class B	Class A	Class B
	N=12	N=7	N=12	N=7
Pre-test	17.92	12.70	2.06	3.25
Post-test	31.42	26.50	3.10	4.10
Gain	13.50*	13.80*		
	p < .001	p < .001		

With $p < .001$, the gain in details retelling was statistically significant and confirmed that the students had improved significantly from their baseline performance in the retelling of details.

Enhancement in Comprehension Levels

At baseline, the 19 student-participants were at a frustration level for comprehension. Although all students attained advancement in reading comprehension performance, the QRI-5 post-test data showed that not all progressed to an independent level for comprehension. In Class A, 58% (seven) of the student-participants shifted to an instructional level and 42% (five) of them advanced to an independent level. In Class B, 71% (five) of the student-participants shifted to an instructional level of comprehension while 29% (two) of them moved to independent level.

DISCUSSION AND RECOMMENDATIONS

In this study, reciprocal teaching was a larger pedagogical scaffold that the students learned to use in the context of their particular classrooms for scaffolding reading comprehension. Similar to Lewis (2016), the researcher found a paucity of research on reciprocal teaching done within Caribbean school contexts, but expected that the findings would be similar to those reported in reciprocal teaching studies done across North America and Europe. The findings of gains in comprehension reported in this study are consistent with a robust literature pertaining to reciprocal teaching studies

done over a period of thirty years. For example, Palincsar and Brown (1984) and Lysynchuk, Pressley, and Vye (1990) who implemented reciprocal teaching with students who had reading skills similar to the students in this study, reported statistically significant improvements ($p < .01$). Within the Caribbean, Lewis (2016) also reported significantly improved group means and individual post-test scores of the participants who received reciprocal teaching training over those of the control group.

The value of reciprocal teaching as an intervention capable of improving students' reading comprehension has been well established (Rosenshine & Meister, 1994). However, this value has been garnered primarily through carefully controlled experimental conditions - much unlike what happens in real classroom life. A formative design allowed the researcher, working in close collaboration with the teachers, to make a modification when it would benefit the students most, that is, during the intervention. Hacker and Tenant (2002) stated that there are teachers who have reported challenges in their attempts to use reciprocal teaching in authentic classroom contexts. The students who participated in this study encountered challenges in using questioning and summarizing. The researcher stresses that the modifications made contributed to the gains made in the students' comprehension performance.

The results of this study may be particularly useful to teachers in similar classroom contexts as well as researchers interested in implementing a reciprocal teaching intervention using formative experiment methodology to support students who have adequate decoding, but who lag in comprehension proficiency. They might find that modifications are needed for the method to be effective with their students (Hacker & Tenant, 2002). Researchers implementing future reciprocal teaching studies (within or beyond the Caribbean region) can look at the utility of the modifications made in this study. A future study should focus attention on implementing reciprocal teaching using a formative experiment approach, across multiple classrooms where the students bear similar reading characteristics to those who participated in this study. If such a study is done successfully, then another study can be done to determine the effects of utilizing a similar reciprocal teaching intervention across multiple classrooms, in differing contexts, to determine how and why results differ.

If we consider the findings of Durkin (1978-1979) that students very rarely received comprehension strategies instruction, and Onofrey and Theurer's (2007) assertion that "many teachers still find comprehension instruction a mystery" (p.104), then it is quite possible that nothing much has shifted today in terms of the reading comprehension instruction that students receive. As part of the way forward, it may be necessary to equip primary school teachers with the kind of professional learning support that would enhance their knowledge regarding reading comprehension development, as

well as build their procedural skills for actually using explicit comprehension instruction in their classrooms.

CONCLUSION

Many primary school children in Trinidad and Tobago are not developing the comprehension skills needed to facilitate meaningful interaction with written texts. Similarly, across Caribbean countries, there exists a share of primary school students who do not attain high levels of comprehension skills and are ill-prepared to make a smooth transition to secondary education. Consequently, the need to address the building of reading comprehension skills is particularly salient. In a reading comprehension research landscape where reciprocal teaching is certainly not new, the modifications made to this local study contribute to the freshness of this reciprocal teaching intervention and sets it apart from other reciprocal teaching studies done globally.

At least with the two teacher-participants, this study sought to make a difference in a context of real-world classroom practice as it leveraged teaching and learning by making insights useable, actionable, and adoptable to their students' comprehension needs. Primary school teachers who are operating under a similar context to the teachers who participated in this study may benefit indirectly from the knowledge generated by this study. Importantly, this study was beneficial at least to the 19 student-participants. Training them to embed predicting, summarizing, clarifying, and questioning in their reading assisted in ameliorating their reading comprehension. Perhaps the knowledge and skills gained by these students may forever change the way they interact with written text.

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