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COMPREHENSION MONITORING STRATEGIES AS DETERMINANTS OF ACHIEVEMENT IN READING COMPREHENSION OF SECONDARY SCHOOL STUDENTS WITH LEARNING DISABILITIES IN IBADAN, OYO STATE

Kelechi Uchemadu Lazarus

Abstract

This study examined three comprehension monitoring strategies: rereading, clarifying concepts and vocabulary in texts and reflecting/reviewing text as determinants of achievement in reading comprehension among secondary school students with learning disabilities in Ibadan, Oyo State. The study adopted the correlation research design. Purposive sampling was used in selecting 200 male and female Junior Secondary School One (JSS 1) students with learning disabilities in Ibadan. Data were collected using three instruments: Pupil Rating Scale, Questionnaire on Comprehension Monitoring Strategies and Reading Comprehension Evaluative Scale. Pearson Product Moment Correlation and Multiple Regression Analysis were used to analyse the data obtained at $p < 0.05$. The results showed that the three independent variables (rereading; clarifying concepts and vocabulary in the text; and reflecting and reviewing the text) positively correlated with the dependent variable (achievement in reading comprehension of students with learning disabilities): rereading ($r = 0.574$) clarifying concepts and vocabulary ($r = 0.450$) reflecting/reviewing ($r = 0.609$). However, it was found that reflecting/reviewing text made the highest contribution ($\beta = .636$, $t = 13.312$) followed by rereading with $\beta = .390$, $t = 6.510$, while clarifying concepts and vocabulary in text had the least contribution ($\beta = .347$, $t = 6.561$) to the explanation of students' achievement in reading comprehension. By implication, the study recommended that an increased influence of the three independent variables could predict or lead to increase in achievement in reading comprehension. On the basis of the findings, it was recommended that teachers of students with learning disabilities should encourage the students to implement the metacognitive comprehension monitoring strategies of rereading, clarifying concepts and vocabulary in text and reflecting and reviewing the text.

Introduction

Learning disabilities is a general category of special education that manifests in students who possess average or above intelligence quotient but continue to experience substantial underachievement in learning. Consequently, the performance of a student with learning disabilities may be two or more years below his actual grade level. Learning disabilities does not exclusively affect one area of learning. Rather, it is characteristic of those students who experience learning disabilities to exhibit significant difficulties in one or more specific areas of a student's learning such as reading, listening, speaking, written expression and mathematics. Majority of students with learning disabilities have specific learning disability in reading (Cortiella & Horowitz 2014). These students experience difficulties with one or more components of reading including word recognition, decoding, fluency, vocabulary and comprehension. Literature suggests that all reading activities are expected to result in the comprehension of what is read and not just end in word calling.

Reading comprehension difficulties sometimes occur when students' fail to recognize and apply metacognitive strategies before, during and after reading. For instance, it may be difficult for a student with learning disabilities to determine if there is a breakdown in comprehension while reading and if so, at what point it occurred. In that case, the student may continue reading the text without checking to find out whether he/she understands it or not. Students with reading comprehension disabilities often do not realize their inability to comprehend the text whenever it occurs (Sesma, Mahone, Levine, Eason & Cutting, 2009). Consequently, students with learning disabilities do not comprehend much of what they read and perform below their peers without learning disabilities in texts and examinations across subject areas. This is because the ability to read and comprehend what is read sets the foundation for acquisition of knowledge and virtually all academic skills.

Conversely, proficient readers have formed the habit of not only monitoring themselves to check for comprehension breakdowns when reading; they also utilize certain repair strategies to monitor how much of their reading that they understand and resolve any issues relating to breakdown in comprehension. The Reading First in Virginia (2010) explained that a reader is expected to willingly engage in self-evaluation of the comprehension processes, exercise control over his/her cognitive processes and ensure that the process of comprehension continues without distortion. West by (2005) identified two functions of metacognition that good readers employ as they read. These are: the ability to plan one's reading and pay attention to what is read (self-management) and the ability to monitor understanding, that is, check that the right meaning is constructed during reading (self-appraisal).

Empirical literature has documented efforts made by researchers in remediating poor reading comprehension achievement among learners with learning disabilities. Using 80 pupils with learning disabilities in Osun State, Nigeria as participants, it was

found that decoding skills and prior knowledge were potent predictors of reading comprehension of pupils with learning disabilities, with decoding skills being of more importance than prior knowledge (Lazarus & Alake, 2016). Other studies include the use of explicit strategy instruction (Swanson, 2001), multiple reading strategies (Perfetti, Landi & Oakhill, 2005), questioning and self-monitoring (Johnston, Barnes & Desrochers, 2008) and collaborative strategic reading (Lazarus, 2013). Despite the useful insight provided by the findings of these studies into reading comprehension achievement, the trend of poor performance in reading comprehension among learners with learning disabilities remains unchanged. One possible reason for this is researchers' relative neglect of the importance of metacognition in reading comprehension, specifically in the aspect of comprehension monitoring strategies. Hence, the focus on the predictive influence of rereading, clarifying concepts and vocabulary in texts and reflecting/reviewing text among learners with learning disabilities in Ibadan, Oyo State, Nigeria. Rereading the text or segments of the text has been identified as one of the effective strategies used by proficient readers to monitor comprehension (Klingner, Vaughn, Dimino, Schumm & Bryant, 2001; Neufeld, 2005; Reading First in Virginia, 2010; Kosanovich, 2013). On the contrary, students with learning disabilities who experience reading comprehension difficulties may be unable to reread entire texts or segments of the text for better understanding. Hedin and Conderman (2010) stated that there are several reasons why some students do not reread texts. For instance, students who are not interested in putting in extra time while reading may not be able to reread effectively. This is because rereading requires readers to use extra time. Furthermore, if a passage is lengthy or difficult, students may be discouraged from rereading the text. In addition, while some students believe that they may not be able to comprehend passages even if they reread them, other students think that this strategy is not helpful to them (Otero, 2002). In consonance with this viewpoint, Hedin and Conderman (2010) postulated that other repair or comprehension monitoring strategies should be taught with rereading to enable students to combine these strategies for effective comprehension of texts.

A study was conducted by Heller (1988) using fifty (50) undergraduates to identify the main idea of passages. The findings showed that participants understood the passages when they made use of reading strategies such as rereading, focusing on details and making inferences. Callender and McDaniel (2009) also carried out four different experiments on comprehension. The studies involved comparing the outcome of reading a text once to reading the text many times. All the four studies demonstrated no statistical differences in the comprehension of participants who read a text once and those who reread the text. Callender and McDaniel (2009) submitted that the rereading strategy was ineffective because it did not restructure the text for easier understanding on subsequent reads. On the contrary, obtained a result that revealed a benefit of rereading although the study design was similar to the one used by Callender and McDaniel (2009). In addition, participants in Callender and McDaniel's (2009) study

did not find any benefit of rereading, perhaps because they did not thoroughly process information during the rereading exercise (Rawson, 2012).

Furthermore, Phillips, Mills, D'Mello and Risko(2016) reported that the rereading strategy (for instance, reading a text only once) is more beneficial to readers than other strategies. Participants in the study were ninety-six (96) adult staff of Amazon Mechanical Turk (AMT) in Canada. Phillips et al. (2016) submitted that although their mind wandered, participants affirmed that they gained more confidence in their competence during rereading sessions. Kiel (2016) found that researchers have actually based their submissions about benefits of rereading on comprehension on varied assumptions. Some of the assumptions are that rereading is a kind of reanalysis, revision or reprocessing of some or all of the previously read text. Another assumption is that a reader derives a more accurate, grammatically accurate interpretation of the text reread. The extent to which these assumptions are correct will be examined in this study.

The second aspect of comprehension monitoring strategies is clarifying a concept or vocabulary in text. It is not enough for students to read the words in a passage correctly. Students need to realize that knowledge of the meaning of a word in context provides clues to understanding the gist of a text or passage. Students need to learn to make sense out of words, sentences and passages. In addition to the rereading strategy, Perfetti et al., (2005) suggested that readers can search the context for clues. In other words, the reader can use the words around a chunk to figure out its meaning, guess the meaning of the unfamiliar word and check for antonyms and synonyms. Moore (2012) suggested that it is important for readers to learn to clarify ideas and vocabulary with the use of fix-up strategies. Readers can also acquire more vocabulary by using context clues together with other word-level fix-up strategies. Moore (2012), in support of Troegger's (2011) submission on some fix-up strategies for classroom lessons in reading, acknowledged the influence of vocabulary knowledge on reading comprehension. According to Troegger (2011), the metacognitive strategy of clarifying words in texts is important for the better comprehension of these texts. In order to clarify the meaning of words and expressions, readers can use dictionaries and glossaries, pictures and illustrations and/or context clues. A reader can also ask for help from others, reread portions of texts and segment words to clarify unclear terms and expressions.

Furthermore, Oczuks (2003) evinced that predicting, questioning, clarifying and summarizing are parts of a multiple comprehension strategy known as reciprocal teaching which was developed by Palincsar and Brown in 1984. As a matter of interest, this study focuses on the clarifying strategy because when students use it, they are able to understand the meaning of a difficult word through simple identification of chunks within the word. Students can blend the sounds of a word, suggest a synonym to the difficult word, or make use of context clues. Thus, the clarifying strategy makes problem solving during reading more explicit. Okkinga, van Gelderen, Sleegers and van Steensel (2015) studied the impact of the reciprocal teaching strategy on adolescents with low

achievements in reading comprehension. These adolescents were divided into two groups. Some were placed in natural classroom settings while others were in small-group settings. The findings demonstrated that reciprocal teaching was effective in improving participants' reading comprehension performance when the experimental teachers provided adequate modelling for participants and vice versa. Ayun and Yunus (2017) studied how effective reciprocal teaching strategy was on improving the reading comprehension of forty-four (44) students and found that participants in the reciprocal teaching treatment group obtained better results than those in the control group. By providing evidence of the effectiveness of reciprocal teaching strategy, these studies suggest that clarifying words in texts is an important comprehension monitoring strategy that students with learning disabilities should adopt.

The third aspect of comprehension monitoring strategies is reflecting and reviewing text. Reflecting and reviewing text during reading comprehension activity involves a lot of thinking. It entails that a reader put together what he has just read with what he had read before. Readers can think about their prior knowledge and connect them with the present information. By so doing, the present information becomes more meaningful and comprehension is enhanced. For instance, a reader who reflects after reading a text may not only choose to think about the author's purpose for writing; he may also pay close attention to his thoughts on the text in order to benefit from the process. For this reason, Thorndike (1917) cited in Lazarus (2009) described reading as a thinking activity and likened the thinking process used in mathematics to that of reading.

In line with this assertion, the Minnesota Centre for Reading Research (n.d) explained that thinking during reading is one fix-up strategy which teachers can teach students. Students can reread, think, ask themselves questions about confusing concepts and then reread to answer the questions. In this case, both rereading and thinking can occur side by side, one strategy complementing the other. This is also in agreement with Kiel's (2016) assertion about rereading being largely considered to be a kind of reanalysis, revision or reprocessing of some or all of the previously read text. In other words, a reader engaging in rereading would do some thinking, analyzing and assessing of the content read. Here, we find one fix-up strategy complementing the other for effectiveness.

Hedin and Conderman (2010) conducted a study that involved sixth grade students who engaged in think aloud sessions while reading a text. It was found that most of the time, participants spontaneously reread portions of text. Hedin and Conderman (2010) therefore, submitted that students who paused to think aloud after reading some sentences (for example, two to four sentences) were able to make connections between ideas in the text, plan what to say before answering questions and consolidated on knowledge from the text. Such students gained more information and improved in their reading. Reflecting and reviewing text can take different dimensions. It can occur before the actual reading of a text (pre-reading), during reading, and after reading.

While reflecting and reviewing a text, students can be encouraged to think about the content of the passage before, during or after reading it. By so doing, students become focused on what they read and are able to control mind wandering during reading. If rereading encourages more mind wandering as Philips et al (2016) suggested, then teaching students to employ the metacognitive strategy of reflecting and reviewing what is read will be quite beneficial.

Statement of the problem

In view of the foregoing, it appears that there are divergent views on the relationship between comprehension monitoring strategies such as rereading, clarifying concepts and vocabulary in text and reflecting and reviewing of text as well as comprehension of texts by learners with learning disabilities. The present study seeks to provide more research insight into this relationship. Thus, it becomes imperative to investigate the extent to which three comprehension monitoring strategies (rereading, clarifying a concept or vocabulary in the text and reflecting and reviewing the text) influence the achievement in reading comprehension of students with learning disabilities.

Research Questions

1. Are there significant relationships between independent variables (rereading, clarifying concepts and vocabulary in the text as well as reflecting and reviewing the text) and dependent variable (reading comprehension achievement of students with learning disabilities)?
2. To what extent does rereading, clarifying concepts and vocabulary in the text and reflecting and reviewing the text jointly account for the reading comprehension achievement of students with learning disabilities?
3. What is the relative contribution of rereading, clarifying words in the text and reflecting and reviewing the text to the reading comprehension achievement of students with learning disabilities?

Methodology

The study adopted correlation research design. Inferences about relations among variables were made without direct interaction from concomitant variations of independent and dependent variables. Two hundred (200) Junior Secondary School One (JSS 1) students who experience learning disabilities in Ibadan North Local Government Area (LGA) of Oyo State, Nigeria participated in the study. Ibadan North is one of the urban areas of Ibadan Municipality. Ibadan North LGA was purposively selected and 6 secondary schools were randomly chosen to allow the researcher to get the desired sample. Participants were then purposively selected as all students from the 6

selected schools were screened for learning disabilities through the use of the Pupil Rating Scale as described in the section that follows. Male participants were 103 (51.5%) while female participants were 97 (48.5%). Their age range was between ages 11 and 17 years. One hundred and thirty-one (131) participants representing 65.5% were between the ages of 11 and 15 years while sixty-nine (69) of them representing 34.5% were between 16 and 17 years.

Instrumentation

The instruments for the study were three different instruments. These instruments were:

The Pupil Rating Scale: (Revised): Screening for Learning Disabilities by Myklebust (1981): This scale consisted of twenty-four (24) questions that covered spoken language; orientation; personal social behaviour; auditory comprehension and motor co-ordination of learners. Teachers rated students using a Likert five-point scale with "1" indicating poor behaviour, "5" good behaviour and "3" average behaviour. The highest possible score was 120 (5x24). A student could obtain an average rating (that is, a rating of "3" for each item) on all items to make up a total of 72 points. For the purpose of this study, a score below the sixty (60) points suggested the presence of learning disabilities in a student and vice versa. Lazarus and Aransiola (2016), using this instrument, obtained a reliability coefficient of 0.89 when the instrument was revalidated.

Questionnaire on Students' Use of Comprehension Monitoring Strategies (QSUCMS): This is a 20-item researcher-designed instrument that measured how participants utilize comprehension monitoring strategies. This instrument consists of four sub-sections (Sections A to D). Section A measured the demographic attributes of age, gender and school type. Section B contained 7 items on the rereading comprehension monitoring strategy. Questions elicited responses on whether students engaged in: looking back into portions of the text already read, rereading difficult words, sentences, paragraphs or passages before continuing with the reading and restating what was read. Section C elicited responses on whether students identified new concepts and vocabulary in the text while reading, figured out the meaning of unfamiliar words by using the ideas and words around them or simply guessing their meaning, and so on. There were 7 questions in this section. Section D elicited responses from students on whether they thought about the content of the passage before reading, paused to think about what was being read and paid close attention to what they were reading. There were 6 items in this section. All the questions in sections B, C and D were scored on a modified Likert scale of "Strongly disagree" to "Strongly agree". Thirty JSS 1 students with learning disabilities who were not part of the study sample were used for the pilot test. The reliability co-efficient of the instrument was computed using Cronbach alpha statistics. The following reliability co-efficient were got: Section B- 0.81; Section C- 0.74 and Section D- 0.79. This confirmed the reliability of the questionnaire.

Reading Comprehension Evaluation Scale (RCES): This achievement test was designed by the researcher to elicit responses on the participants' achievement in reading comprehension. Those who took part in the study read a passage and answered questions on it. Questions covered both literal and inferential facts. The researcher obtained a reliability co-efficient of 0.75 after the Kuder-Richardson (KR-20) computation of trial test data was done.

Data Analysis

Data collected through the questionnaires were subjected to inferential statistical techniques. The relationship between the independent variables and the dependent variable was established with the help of Pearson Product Moment Correlation (PPMC) while the joint and relative contributions of the independent variables to the prediction of the dependent variable were ascertained by using multiple regression analysis.

Results

Research Question One: Are there significant relationships between the independent variables (rereading, clarifying concepts and vocabulary in the text and reflecting and reviewing the text) and the dependent variable (reading comprehension achievement of students with learning disabilities)?

Table 1: Inter -correlation matrix showing the relationship between independent and dependent variables

Variables	1	2	3	4
Achievement in Reading Comprehension	1.000			
Rereading	0.574**	1.000		
Clarifying concepts and vocabulary	0.450**	0.416**	1.000	
Reflecting/Reviewing	0.609**	0.389**	0.440**	1.000

**Correlation is significant at 0.05 (2-tailed)

Table 1 showed the inter-correlational matrix of the relationship between the independent variables (rereading, clarifying concepts and vocabulary and reflecting/reviewing the text) and the dependent variable (reading comprehension achievement). All the three independent variables positively correlated with the dependent variable. The correlation co-efficient ranged from moderate to high, hence, there was a positive relationship between rereading strategy ($r = 0.574$; $p < 0.05$); clarifying concepts and vocabulary ($r = 0.450$; $p < 0.05$); reflecting/reviewing the text ($r = 0.609$; $p < 0.05$) and achievement in reading comprehension. By implication, an increased influence of the three independent variables could predict or increase comprehension achievement.

Research Question Two: To what extent does rereading, clarifying concepts and vocabulary in the text and reflecting and reviewing the text jointly account for the reading comprehension achievement of students with learning disabilities?

Table 2: Multiple Regression Analysis showing the joint contribution of independent variables to reading comprehension achievement of students with learning disabilities

R	Multiple R Square	Multiple R ² Adjusted	Std. Error of the Estimate			
0.822	0.675	0.670	0.29923			
Analysis of Variance (ANOVA)						
Model	Sum of Squares	Df	Mean Square	F	Sig.	Remark
Regression	36.450	3	12.150	135.693	0.000	Sig.
Residual	17.550	196	0.090			
Total	54.000	199				

Table 2 revealed that the joint contribution of independent variables (rereading, clarifying concepts and vocabulary and reflecting/reviewing the text) on achievement in reading comprehension of students with learning disabilities was significant ($F_{(3,196)} = 135.693$, $p < .05$). The independent variables also yielded a coefficient of multiple regression (R) of 0.822, R Square = 0.675; Adjusted R Square = 0.670 and Standard Error = 0.299. This implies that the three predictors jointly contributed 67% variance to the prediction of the achievement in reading comprehension among students with learning disabilities. The remaining percentage not accounted for could be as a result of extraneous variables not addressed in this study.

Research Question Three: What is the relative contribution of rereading, clarifying concepts and vocabulary in the text and reflecting and reviewing the text to reading comprehension achievement of students with learning disabilities?

Table 3: Regression Analysis showing the relative contribution of independent variables to achievement in reading comprehension of students with learning disabilities

Model	Unstandardized Coefficient B	Std. Error	Stand. Coefficient Beta Contribution	T	Sig.
(Constant)	1.723	0.237		7.256	0.000
Rereading	0.177	0.027	0.390	6.510	0.000
Clarifying concepts and vocabulary in text	0.161	0.025	0.347	6.561	0.000
Reflecting/Reviewing text	0.618	0.046	0.636	13.312	0.000

Table 3 showed that all the variables were independently significant. The table revealed that reflecting/reviewing had the highest contribution of 63.6% ($\beta=.636$, $t=13.312$, $p<0.05$) followed by rereading with 39.0% ($\beta=.390$, $t=6.510$, $p<0.05$), while clarifying concepts and vocabulary in text, had the least contribution of 34.7% ($\beta=.347$, $t=6.561$, $p<0.05$).

Discussion of Findings

This study investigated the extent to which three comprehension monitoring strategies (rereading, clarifying a concept or vocabulary in the text and reflecting and reviewing the text) influence the achievement in reading comprehension of learners with learning disabilities. Results are discussed in consonance with the study objectives. The results obtained from research question one as presented in table 1 confirmed a positive relationship between the three independent variables (rereading, clarifying concepts and vocabulary in text, reflecting/reviewing the text) and achievement in reading comprehension among students with learning disabilities. This finding corroborated the plethora of studies which support the influence of comprehension strategies on reading comprehension achievement. Specifically, the finding corroborated the result obtained by Heller (1998). Study findings also agreed with those of Rawson (2012) that rereading has some benefits on comprehension of text. The finding further supported the finding of Gelderen, Slegars and van Steensel (2015) on the efficacy of reciprocal teaching strategy (a strategy that has the skill of clarifying concepts and words in text embedded in it) on text comprehension of low-achieving adolescents. The present finding also agreed with Hedin and Conderman (2010) on the benefit of the rereading strategy and thinking aloud on text comprehension. In other words, the finding supports that when students pause to think aloud during reading, they make meaningful connections, build knowledge and comprehend better.

The second research question shows that the independent variables jointly contributed 67% variance to the prediction of the achievement in reading comprehension among students with learning disabilities. These findings were in agreement with the result of studies conducted by Phillips et al. (2016) who reported that rereading was more profitable to students as it led to a better understanding of a text. The finding, however, contradicted the finding of Callender and Mcdaniel (2009) which failed to discover any support for the evidence of the benefit of rereading as against reading a text only once.

The third research question revealed that reflecting/reviewing the text had the highest contribution of 63.6% followed by rereading with 39.0%, while clarifying concepts and vocabulary in text, had the least contribution. This outcome was expected because it corroborated the findings of Lazarus and Alake (2016) which found that decoding skills and prior knowledge are both potent predictors of reading

comprehension among pupils with learning disabilities. Reflecting and reviewing text was found to contribute the highest in the present study. When readers think about a passage before reading it, while reading and after reading, they will utilize the ideas in their prior knowledge to reconsider the main ideas in the text, thereby gaining better understanding of the text. The present finding is therefore in consonance with numerous studies that confirm the importance of rereading strategy as well as the strategy of clarifying concepts and vocabulary in text such as Hedin and Conderman (2010), Rawson (2012) and Phillips et al. (2016).

Conclusion and Recommendations

This study in its findings, shows that reflecting and reviewing the text makes the highest contribution to the reading comprehension achievement of students with learning disabilities, followed by rereading strategy and, finally, clarifying concepts and vocabulary in the text read. Therefore, students with learning disabilities need to use the strategy of reflecting on and reviewing text more often than the other strategies in order to enhance their understanding of texts. By implication, students with learning disabilities will comprehend texts better if they are able to: identify comprehension breakdowns and select and utilize appropriate comprehension monitoring strategies whenever they engage in reading. The following recommendations were made:

1. Teachers of students who experience learning disabilities should teach the students how to apply the metacognitive strategies of rereading, clarifying concepts and vocabulary in the text and reflecting/reviewing text for enhanced reading comprehension.
2. During the process of reflecting on and reviewing what is read, students can explore options they can use to find additional and deeper information of a text such as asking someone for help, checking the internet or other reference resources as well as making use of dictionaries, thesaurus, atlas and almanac to aid comprehension. These fix-up/repair activities will make a reader to gain more understanding of text and should be encouraged.
3. Efforts should be made by teachers of students with learning disabilities to teach them how to select appropriate comprehension monitoring strategies suitable for making them gain more understanding of the text as the need arises.

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