



An Investigation into the Correlation between Students' Metacognitive Reading Strategy Use and Reading Performance in English

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ABSTRACT

The purpose of this study was to investigate the relationship between students' metacognitive reading strategy use and reading performance in English. The participants of the study were 32 randomly selected summer scheme 2019 academic year undergraduate Sidama language and literature trainees who took several English language courses including reading skills courses. To collect the necessary data for the study, the researchers utilized Mokhtari and Sheorey's (2002) Survey of Reading Strategies and a reading comprehension test. Hence, it is a correlational study. A Bivariate Pearson correlation was conducted to examine the degree and direction of association between the subjects' use of reading strategy and their reading performance in English. Besides, means and standard deviations were computed to determine the level of applying the metacognitive strategies by the subjects. In both of the analyses, the researchers used the SPSS version 20. The findings showed that the participants are active users of all three types of reading strategies (global, problem-solving and support strategies) measured by the Survey of Reading Strategies (SORS), problem-solving strategies were the most preferred and support strategies the least preferred. Conversely, the Pearson correlation analysis results showed that there is no statistically significant relationship between the overall metacognitive reading strategy use and the total score of the student's general reading test performance ($r = 0.112$, $p = 0.585$). It is, therefore, concluded that the students are high reading strategy users of all three types of reading strategies, but there is an insignificant correlation with their reading performance where this inconsistency may be partly attributed to unguided or unconscious usage of reading strategies.

Keywords: metacognitive, reading strategies, reading performance, correlation

1. INTRODUCTION

It is commonly recognized that reading is an important skill in higher education and job performance. Reading comprehension is essential for conveying ideas and updating knowledge. Grabe (2009) states that the need for effective reading skills and strategies has increased to cope with the large quantities of information made available due to the advent of the computer and the Internet. Students need to develop the necessary reading skills so that they become effective readers. For students to become better readers, they need to become aware of how they are reading and what they could do to improve their comprehension.

Reading comprehension is probably the most extensively and most widely debated research topic in language teaching. Much of the debate on reading comprehension is polarized around two key issues: research that aims at trying to understand the nature of reading comprehension and how to read effectively, and research that focuses on the skills involved in reading comprehension and how to develop them in reading classes.

In academic settings where English as a foreign language serves as a medium of instruction at secondary and tertiary levels, like Ethiopia, the role of reading comprehension is highly significant in students' academic achievement. Thus, to achieve the educational objectives of the curriculum, reading performance plays a crucial role. However much significant, reading must be well equipped with various knowledge that learners come to understand and to meet a particular reading purpose. Among the very crucial components to be mastered among Ethiopian students in addressing reading skills are the knowledge and use of appropriate reading strategies.

Reading strategies, referred to as "the mental operations involved when readers purposefully approach a text to make sense of what they read", may be applied consciously and controlled by the readers, or unconsciously when the strategies have become automatic (Barnett, 1989, p. 66). While conceptualizing reading strategies, Ethiopian university students need to know first the reading strategies identified by various scholars and their classifications. The use of those strategies should emanate from the knowledge of the nature of reading comprehension strategies (RCSs).

According to Chamot and O'Malley (as cited in Koda, 2005), there are three categories of reading strategies based on their functions. The first category is cognitive strategies that are

used to complete cognitive tasks such as inference and word-part analysis. The second category is metacognitive strategies (the focus of the current study), namely the strategies that are used to control cognitive processes such as comprehension monitoring and repairs. The third one is social and affective strategies that are used by the readers to cooperatively interact with others during the reading process such as asking for assistance from others.

In a bit different way, Anderson (1991) classified reading strategies into three categories. The first ones are supervising strategies that are used to monitor progress in comprehension, and support strategies to regulate processing behaviors. The second is paraphrase strategies that involve local-information processing such as using cognates and word analysis, strategies to establish coherence in text that involve global text information processing, and the other is test-taking strategies that are used in completing a task in a reading test.

Reading strategy classification by Paris, et al. (as cited in Koda, 2005) is based on time of use, namely before, during and after reading. Before-reading or pre-reading strategy is used to activate the prior knowledge of the readers in relevance to the reading text. During reading, strategies are used to identify the main idea, make references, and cross-reference whereas after reading or post-reading strategies are used to review the text content.

As the main target of this study is metacognitive strategies, effective readers apply one or more of these strategies to analyze the text. The application of strategies has grown over time as the reader studies which ones are best related to contribute to comprehension (Pressley, et al., 1998). Learning to read is not only learning to understand words; it is also learning to make sense of texts. Successful language learners must have the ability to supervise, evaluate and control their thinking (Koda, 2007).

Metacognition is an essential characteristic of effective reading and reading instruction (Israel, 2007, p.1), and so is metacognitive consciousness of the reading strategies one uses. The literature widely discusses that students' use of reading strategies, their metacognitive consciousness and reading performance are very closely related. In particular, the strategies of reading used by the readers, their metacognitive consciousness and reading proficiency are very closely correlated. Essentially, successful readers use more strategies compared to less successful students and use them more frequently. Meanwhile, Sahin (2011) states that meta-knowledge strategies are complex intellectual skills that are taken into consideration as the essential factors of smart behavior for processing information.

Mokhtari and Sheorey (2002) developed a survey called Survey of Reading Strategies (SORS) to measure the use of metacognitive reading strategies and they used another classification scheme to classify the reading strategies. That is, they classified metacognitive reading strategies into three types, namely global, problem-solving and support strategies.

In Ethiopian universities where harmonized curriculum has already been in place since 2013, reading skill is taught across departments. To achieve the national goal, university students are supposed to develop reading skills by making use of different reading strategies.

Current studies in second/foreign language research have focused specifically on reading strategies that learners use when they read academic English texts (Mokhtari and Richard, 2004; Malcolm, 2009). Successful language learners know how to use such reading strategies efficiently. The purposes of reading strategies are to have general knowledge, get a specific detail, find the main idea or theme, learn, remember, delight, summarize and do research (Hyland, 1990).

Research addressing metacognitive awareness and the use of reading strategies by first and second-language readers of English has shown that important reading strategies which deal with planning, controlling, and evaluating one's understanding (e.g., setting a purpose for reading, prediction, summarization, questioning, use of text structural features, self-monitoring, etc.) are widely used by first and second language readers (Sheorey and Mokhtari, 2001).

Anderson (1991) found that students who used more reading strategies while taking standardized reading tests and reading textbooks scored higher on reading comprehension, but there is no relation between unique strategies and reading comprehension as readers with high comprehension and low comprehension reported using the same processing strategies. In general, reading strategies show a correlation with reading comprehension, and low and high-proficient students may use different strategies to comprehend a text.

However, various local research reports in Ethiopia indicate that there seems only a focus on different factors affecting students' reading performance other than reading strategies at secondary and tertiary levels. The findings of the studies invariably portray the students' low reading performance in secondary school and tertiary levels (Taye, 1999; Girma, 1994, cited in Gezahegn, 2013). Their findings suggest that the student's reading ability at secondary and

tertiary levels in Ethiopia has been declining. Another study also strengthens this phenomenon that the great majority of the students in government secondary schools in Ethiopia lack basic reading skills in English (Dubale, 1991, cited in Edaso, 2007).

So far the studies focus mainly on the general affecting factors of secondary and tertiary level students' reading. To the knowledge of the researchers, there seems little attention given to the reading strategy use by university students as one of their reading practices. While doing reading activities, it is assumed that they employ those identified reading strategies either consciously or unconsciously. It is, therefore, important to examine whether the students' use of metacognitive reading strategies has a relationship with their reading performance. This examination initiated the researchers to study in the Ethiopian context what scholars have documented about the correlation between students' metacognitive reading strategies and reading performance. It is stated that the use of reading strategies has often been correlated to reading performance although the systematic connections between sets of strategies and reading performance have not been fully discovered (Koda, 2005).

The main objective of this study is to investigate the relationship between metacognitive reading strategy use and reading performance in English concerning selected summer scheme undergraduate Sidama language and literature trainees who already took some English language courses including reading skills courses.

The specific objectives of this study were to:

- I. Examine if the use of metacognitive reading strategies influences students' reading comprehension in English;
- II. Investigate the association between students' use of global, supportive and problem-solving reading strategies and reading performance in English;
- III. Examine whether the students' use of reading strategies makes an independent contribution to the prediction of higher reading comprehension.

To this end, this research attempted to answer the following three research questions:

1. What is the relationship between students' use of metacognitive reading strategies and reading performance in English?
2. Is there a relationship between students' use of global, supportive and problem-solving reading strategies and reading performance?

3. Does the use of metacognitive reading strategies make an independent contribution to the prediction of higher reading performance?

2. MATERIALS AND METHODS

This study was conducted at Hawassa University. The university has pre-service and in-service undergraduate and postgraduate programs. As in-service undergraduate program trainees, summer scheme students of Sidama language and literature take a good number of English language courses including reading skills courses. Sidama language or Sidaamu Afoo is an Afro-Asiatic language belonging to the Highland East Cushitic branch of the Cushitic family. It is spoken in parts of southern Ethiopia by the Sidama people, particularly in the densely populated Sidama National Regional State of Ethiopia.

The participants of this study were 32 third-year summer scheme students of Sidama language and literature who already took reading skills courses. In this study, the researchers used a correlational research method to find out the relationship between students' metacognitive reading strategy use and their reading performance in English. In line with this, Creswell (2005) notes correlational design is a procedure in quantitative research in which investigators measure the degree of association between two or more variables using the statistical procedure of correlation analysis.

The selection of the research instruments was determined by the research objectives of the study. That is, to find out the type and frequency of the reading strategies that were used by the study participants, the researchers administered a Survey of Reading Strategies (SORS). To investigate the students' reading performance, a reading comprehension test was administered to the participants.

The participants' use of metacognitive reading strategies was measured using the Survey of Reading Strategies (SORS) developed by Mokhtari and Sheorey (2002). Mokhtari and Sheorey (2002) adapted SORS from the Metacognitive Awareness of Reading Strategies Inventory (MARSI) developed by Mokhtari and Richard (2002). This survey was intended to measure the participants' metacognitive awareness and use of reading strategies.

Survey of Reading Strategies measures three categories of reading strategies, namely global reading strategies, problem-solving strategies, and support strategies (Mokhtari and Sheorey,

2002). The Global Reading Strategies (GLOB), can be thought of as generalized or global reading strategies aimed at setting the stage for the reading act (e.g., setting a purpose for reading, previewing text content, predicting what the text is about, etc.). The problem-solving Strategies (PROB), which are localized, focused problem-solving or repair strategies used when problems develop in understanding textual information (e.g., checking one's understanding upon encountering conflicting information, re-reading for better understanding, etc.), and the Support Reading Strategies (SUP), which involves using the support mechanisms or tools aimed at sustaining responsiveness to reading (e.g., use of reference materials like dictionaries and other support systems). The survey was adopted from the aforementioned source consisting of 30 items, with a 5-point Likert scale ranging from 1 ("I never or rarely do this") to 5 ("I always or almost always do this"). For each statement, the participants were asked to circle the number that indicates the frequency of using a particular strategy, so a higher number means a higher frequency of using a reading strategy. The overall average number indicates how often the participants believe they use the reading strategies.

As said earlier, to measure the students' reading performance for the sake of examining the relationship between their use of reading strategy and reading performance, a reading comprehension test was conducted. The researchers used the reading comprehensions test by adapting slightly from the Reading Comprehension Textbook, Imam Bahrowi, Learning Advances English, PisidAzhar and "Reflections: Television," The New Yorker which was developed by EviRatna Sari (2017) to fit the need and level of the respondents. Several reading passages with multiple items were used to measure a range of the participants' reading skills indirectly. Hence, the reading passages used in this study included general content which was of interest to the students.

The reading abilities measured in this study included reading for main ideas, providing the topic of the passage, identifying major facts and relevant details, finding contextual word meanings, identifying the mode of discourse, referencing, filling cloze items, and making inferences about the implied meanings. The researchers used an objective test in the form of multiple choice having four alternatives to measure the students' reading performance. The test consisted of 40 items.

In terms of reliability and validity, therefore, this survey was field-tested by Mokhtari and Sheorey (2002) at two universities and the results indicated that the survey was reliable in

measuring the awareness and use of reading strategies for ESL/EFL students. It was suitable for academic reading context as was the reading assessment used. Since the SORS was based on Mokhtari and Richard's (2002) Metacognitive–Awareness-of-Reading-Strategies Inventory (MARS), the reliability and internal consistency of the MARS were used to describe the reliability of the SORS. The alpha coefficient for internal consistency was 0.93. The sub-scales of the MARS also show high internal consistency with an alpha coefficient of 0.92 for the global subscale and 0.79 for the problem-solving reading strategies.

The validity of the questionnaire is in good shape as each sub-scale of the questionnaire is adequately supported by theoretical constructs of metacognitive reading strategy awareness. In so doing, the researchers realized that the reliability and validity of the MARS questionnaire were checked very standardly.

Similarly, the researchers proved the reliability of the current reading comprehension test which was adapted as stated above. It was demonstrated that the test was reliable (0.78) for the relevant goals in the current study. On top of that, plenty of attempts were made by the researchers to maintain the validity of the test by stipulating the desired skills for reading

While gathering data, the researchers distributed the questionnaire to the sampled trainees and gave an overview of the purpose of the study and a description of the instrument with an explanation of the steps involved in completing it. At the spot, the respondents were instructed to read each of the 30 statements. Based on their consent, the researchers gave two days to fill in the questionnaire and return it. Depending on the appointment, the researchers collected all the questionnaires back.

Soon after collecting the survey data, the researchers administered the reading test and oriented the study participants to follow each instruction of the test and to act accordingly. They were told to finish the test within sixty minutes. The researchers availed themselves for further clarification. Finally, they collected all the test papers (32).

According to the suggestion of the instrument designers, Mokhtari and Sheorey (2002), the SORS data were interpreted at three levels of reading strategy use frequency: high (≥ 3.5), medium (2.5 – 3.4) and low (≤ 2.4) with the mean scores of each strategy, the GLOB, SUP and PROB categories and the overall strategy. Concerning the reading comprehension test, the students' total scores were recorded.

For the sake of data analysis, the study essentially employed a quantitative approach using the SPSS version 20. A descriptive analysis of means and standard deviations was conducted to explain the students' use of reading strategies at category and general levels. Pearson Product Moment correlation was applied to investigate whether a significant correlation existed between the independent variable (the students' reading strategy use) and the dependent variable (the students' reading performance).

3. RESULTS AND DISCUSSION

The study participants' overall pattern of reading strategy use is presented in Table 1 below. Generally speaking, the participants used metacognitive reading strategies at a high level ($M = 3.7$, $SD = .0.5$). Their use of GLOB strategies was at a high level ($M = 3.8$, $SD = .5$). In a similar fashion, their use of SUP strategies ($M = 3.5$, $SD = .0.7$) and PROB strategies were also at a high level ($M = 3.9$, $SD = 0.5$).

Table 1: Students' Overall Pattern of Reading Strategy Use

	Mean	Std. Deviation	Level
Global Reading Strategies	3.8	0.5	High
Support Reading Strategies	3.5	0.7	High
Problem-Solving Reading Strategies	3.9	0.5	High
Overall	3.7	0.5	High

Results in Table 1 show that the participants use PROB strategies most frequently among the three categories of reading strategies. Therefore, PROB strategies which are “the actions and procedures that readers use while working directly with a text” (Mokhtari and Sheorey, 2002, p. 4) are inevitably often used.

Compared with the PROB and GLOB strategies, the students used SUP strategies least frequently albeit at a high level. The SUP strategies are “basic support mechanisms intended to aid the readers in comprehending a text.”

To this end, the participants had a favorably high perceived use of reading strategies. Yet this perceived knowledge should be aligned with their pedagogical practice, specifically speaking, in applying this knowledge of strategies to perform well in reading tests and to bring the desired outcome. In a nutshell, their perceived use of metacognitive strategies must coincide with their reading performance.

Results of the study about the relationship between the students' metacognitive reading strategy use and their reading performance are presented as follows. Table 2 below shows the general relationship between the students' reading strategy use and their reading performance.

Table 2: Relation of Students' Use of Metacognitive Strategies and Reading Performance

		Students' Reading Performance	Students' Use of Metacognitive Reading Strategies
Students' Reading Performance	Pearson Correlation	1	.112
	Sig. (2-tailed)		.585
	N	32	32
Students' Use of Metacognitive Reading Strategies	Pearson Correlation	.112	1
	Sig. (2-tailed)	.585	
	N	32	32
*. Correlation is significant at the 0.05 level (2-tailed).			

Results in Table 2 above show that there is no statistically significant relationship between the students' overall reading strategy use and their total score on the reading test ($r = .112$, $p = .585$). In other words, when the participants' metacognitive awareness of reading strategies increases or decreases, this may not necessarily indicate whether their academic achievement will increase or decrease.

All in all, the findings indicate that the strategies that students used when taking the test were generally not strongly related to the ones that they used when reading passages. In a similar vein, Meniado (2016), Karami and Hashemian (2012) and Shang (2010) argued that there was no relationship between metacognitive reading strategy use and reading comprehension. The reasons for this can be found in Cohen's (2006, p. 308) claim that the strategies that students employ when taking tests included "the separate set of test management strategies" and "a likewise separate set of test wiseness strategies" in addition to a set of language learner strategies, or it may be because of the context of this study or the participants' insufficient use of metacognitive reading strategies that they have already been aware of (Koşar and Bedir, 2015).

However, many studies have shown a strong correlation between students' reading strategies and their reading achievement. In line with this, Ismail and Tawalbeh (2015) conducted a quasi-experimental study examining the effect of metacognitive reading strategies on EFL low achievers in reading. The study revealed that training on the use of metacognitive reading strategies among low-achieving EFL readers improved their reading comprehension. Channa, et al. (2015) revealed that this study will encourage readers to think over metacognitive reading strategies as the input to construct material of reading comprehension and syllabus based on planning, monitoring and evaluating strategies of the students to increase reading skills for the learners' better comprehension of the text according to their needs as well as teachers' scaffold to improve reading and comprehending abilities of the students. That is to say, the current study contradicts most of the other related studies.

Moreover, it was reported that better readers have better metacognitive awareness of their strategy use which leads to enhanced reading ability (Hamdan et al., 2010, p.135). In addition, Nejad and Shahrehabaki (2015) found that there is a significant positive relationship between the students' metacognitive reading strategy use and their reading comprehension performance. Jafari and Ketabi (2012) have found that the instruction of metacognitive strategy has a positive impact on the desirable noticing of strategy use in terms of awareness-raising. It is very urgent to give more attention that metacognitive strategy instruction encourages learners of EFL to solve their difficulties in reading comprehension and provides the participants with a means of pushing them to develop their reading comprehension. Table 3 below also presents the individual correlation coefficients of each reading strategy to the total test score.

Table 3: The Relation of Sub-Categories of Metacognitive Strategies with Students' Reading Performance

		Students' Reading Performance	Global Reading Strategies	Support Reading Strategies	Problem-Solving Reading Strategies
Students' Reading Performance	Pearson Correlation	1	-.029	.276	-.005
	Sig. (2-tailed)		.889	.172	.980
	N	32	32	32	32
Global Reading Strategies	Pearson Correlation	-.029	1	.275	.377*
	Sig. (2-tailed)	.889		.156	.048
	N	32	32	32	32
Support Reading Strategies	Pearson Correlation	.276	.275	1	.337
	Sig. (2-tailed)	.172	.156		.080
	N	32	32	32	32
Problem-Solving Reading Strategies	Pearson Correlation	-.005	.377*	.337	1
	Sig. (2-tailed)	.980	.048	.080	
	N	32	32	32	32
+*. Correlation is significant at the 0.05 level (2-tailed).					

As far as the three categories of reading strategies are concerned, results in Table 3 above show that students' use of GLOB, SUP and PROB are not significantly correlated to their total scores. Specifically speaking, the results of the analysis from the three sub-categories of metacognitive strategies show that Global Reading Strategies (GLOB) has a coefficient correlation of $-.029$ with the sig $.889 > 0.05$. Support Reading Strategies (SUP) has a coefficient correlation of 0.276 with sig $.172 > 0.05$, and Problem-Solving Strategies (PROB) have a coefficient correlation of -0.005 with the sig $.980 > 0.05$.

In line with this study, a research conducted by Meniado (2016) which investigated the relationship between Saudi EFL learners' use of metacognitive reading strategies and their reading comprehension performances found that while participants moderately used various metacognitive reading strategies, they performed below average on the reading comprehension test which refutes the existence of a relationship between metacognitive reading strategy use and reading comprehension. The weak connection between metacognitive awareness of reading strategies and academic achievement in reading may show that there can be some other factors influencing participants reading skills in such an academic context. To exemplify, the

most probable reason for this may be related to the participants' unguided or unconscious usage of reading strategies. This is most probably linked to metacognition.

Still, since the majority of research supports there is a link between students' reading strategy use and their reading comprehension, researchers have long acknowledged the role of reading strategies in improving learners' reading skills in the target language. As the use of reading strategies has been proven to help language learners enhance their reading comprehension, implications have pointed to the necessity of strategy training in foreign language classrooms.

4. CONCLUSIONS AND RECOMMENDATIONS

The main objective of this study was to investigate the relationship between students' metacognitive reading strategy use and their performance in reading. The results of the study showed that students were high strategy users of all three types of reading strategies measured by the SORS (global, problem-solving and support strategies), problem-solving strategies the most used and support strategies the least used. Although there is a highly reported use of metacognitive reading strategies in general and its sub-categories in particular, the results of the study showed that there is no significant positive or negative correlation between metacognitive reading strategy use and the students' reading performance. The weak connection between metacognitive awareness of reading strategies and achievement in reading may show that there can be some other factors influencing the participants' reading skills in such an academic context.

As the overall result indicated, there is a great mismatch between the students' reported use of metacognitive strategies use and their reading performance. This shows that in practice the students didn't apply their perceived strategies while taking the test or they might have used test wiseness where test wiseness is not necessarily determined by the examinee's language proficiency, but rather is concerned with the knowledge of how to take tests.

There should be mechanisms to bridge the gap between theory and practice. With this regard, the researchers suggested that exposure to an intense target language (TL) may increase metacognitive strategy use. This means that students should be given rigorous reading practice seeking the use of the identified reading strategies. To allow this, metacognitive reading strategy instruction is worth recommending.

Therefore, simply knowing those reading strategies is not good enough for reading comprehension, metacognitive reading strategy instruction (MRSI) first familiarizes EFL students with a series of general reading strategies and then English teachers have to guide them and demonstrate how these reading strategies work when comprehension breaks down during the reading process. Later, after the teacher's modeling of reading strategy use, he or she will give EFL students ample opportunities to practice this kind of reading strategy on their own. Last, the teacher divides EFL students into groups and gradually lets EFL students take control over their reading strategy uses through modeling and sharing with peers.

Finally, participants of the present study were found to have a high level of metacognitive awareness of reading strategies, but still, it can be suggested that instructors should use explicit teaching methods, particularly to make students explore their techniques in reading since one basic distinction between a good and a poor reader was that good readers tend to be better strategy users. In that respect, explicit instruction on the use of reading strategies provides students to perform better in reading comprehension activities.

The present study is an investigation into the correlation between students' use of metacognitive reading strategies and their reading performance at Hawassa University. Since researches in such context of Ethiopian universities are scanty, more efforts are needed to provide further data and insights.

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