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The impact of students' self-regulated language learning on their reading achievement: Grade 9 students in focus

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Abstract

The purpose of this study was to determine whether or not motivational beliefs and self-regulated learning strategies are significant predictors of high school students' reading performance. The sub-scales for the motivation scale were intrinsic and extrinsic goal orientations, task value, and self-efficacy for students' reading performance; while the sub-scales for the cognitive learning strategies were cognitive strategies (memorization, elaboration, and organization) and meta-cognitive self-regulation (planning, monitoring, and evaluating). The study included 107 Grade 9 students at Bahir Dar. Questionnaire, interview and tests were used to gather data. The statistical methods used for analyses were correlation and regression. The data gathered through interview, however, were narrated. The results showed that the students' use of cognitive strategies was a significant predictor of their reading performance.

Keywords: *self-regulation, cognitive strategies, motivational components, meta-cognitive self-regulation, self-regulated learning strategies*

Introduction

The goal of language learning is "authentic communication between persons of different languages and cultural backgrounds" (McIntyre *et al*, 2002, p. 559). To achieve this goal, learners need to set their learning goals, make their learning plans, choose their learning strategies, monitor their learning processes, and evaluate their learning outcomes. In short, they are expected to become self-regulated learners.

Pintrich (2000, p. 435) defined self-regulated learning (SRL) as "an active, constructive process whereby learners set goals for their learning and then attempt to monitor, regulate, and control their cognition, motivation, and behavior, guided and constrained by

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their goals and contextual features of the environment". Zimmerman (2000) defined it as the degree to which students are motivated, use meta-cognitive strategies, and become behaviorally active in their learning process and in accomplishing their goals. Self-regulation encompasses monitoring, management and control of cognition, motivation, and behavior in order to achieve self-set goals (Wolters, Pintrich, & Karabenick, 2003).

Reading is a multi-factor, complex process which involves word recognition and comprehension. As reading is a meaning constructing activity, readers need to utilize their linguistic, cognitive, and socio-cultural resources when they interpret a written text (Delbridge, 2008). Reading is most in need of self-regulation because it challenges students to coordinate multiple types of information [e.g., about a topic; reading tasks; what learning entails in a given subject area; and to plan and manage use of multiple strategies] (Burke, 2001; Rycik & Irwin, 2005; Stetson & Williams, 1992; Vacca, *et al.*, 2005). Research has shown that good readers use various meta-cognitive strategies to monitor and overcome reading problems (Mayer, 1996). If readers know when and how to apply the meta-cognitive strategies, they can easily construct meanings from the text. That is, the students should ask themselves why, how, when, where, and with whom they will learn these skills. The answers for these questions depend on their motivational beliefs (Eccles & Wigfield, 2002; Linnenbrink & Pintrich, 2002; Metallidou & Vlachou, 2007; Pintrich, 2004; Wolters & Yu, 1996) or broadly on their self-regulation practices (Paris & Newman, 1990; Pintrich & De Groot, 1990; Schunk & Zimmerman, 1997; Zimmerman, 2002; Zimmerman & Kitsantas, 1997; Zimmerman & Martinez-Pons, 1986).

Literature indicates that students' use of motivational beliefs and cognitive learning strategies for self-regulation increases their success (Camahalan, 2006; Dresel & Haugwitz, 2005; Eshel & Kohavi, 2003; Malmivuori, 2006; Metallidou & Vlachou, 2007; Whipp & Chiarelli, 2004; Wolters & Yu, 1996; Yukselturk & Bulut, 2007; Zimmerman, 1990). On the other hand, if they do not use these beliefs and strategies effectively, they may fail and/or their anxiety may increase (Fulk & Brigham, 1998; Kurman, 2006; Pekrun *et al.*, 2002). Students must, therefore, organize their motivational beliefs and cognitive self-regulated learning strategies to decrease their reading anxiety and succeed in English language learning in general, and reading development in particular. Self-regulated learners approach learning tasks in a mindful and confident manner, set goals proactively, and develop plans to realize their own learning and reach their learning goals (Cleary and Zimmerman, 2004). Thus, examining students' motivational beliefs and cognitive self-regulated learning strategies can serve as an indicator for their success or failure in reading. The aim of this study is, therefore, to determine whether or not motivational beliefs and cognitive self-regulated learning strategies (both of which are taken as self-regulation components in this study) are significant predictors of grade 9 students' reading performance.

Bandura (1997) emphasizes the importance of individuals' motivational processes. Further, he argues that individuals should shape their beliefs about their abilities, set negative and positive outcomes, and anticipate different pursuits and goals for themselves. According to him, these self-efficacy beliefs have a significant role in regulation of motivation. On the other hand, Linnenbrink and Pintrich (2002) presume a different dimension of motivation and define it as an academic facilitator. They state that self-efficacy, attributions, goal orientation, and goals are significant for students' motivation. Pintrich (2004) emphasizes the importance of motivational beliefs in the learning process and underlines the fact that motivational beliefs—goal orientation, self-efficacy, perceptions of task difficulty, task value beliefs, and personal interest in the task— should be regulated by the students to become effective learners. Students' success increases when these motivational

beliefs are supported by cognitive and meta-cognitive self-regulatory strategies (Pintrich & De Groot, 1990).

According to Pintrich and Garcia (1994), cognitive learning strategies (elaboration, rehearsal, and organization), meta-cognitive control strategies (planning, monitoring, and evaluating learning outcomes) and resource management (time management and management of the learning environment) should be used effectively in self-regulated learning strategies. Learners should have the characteristics of self-generated thoughts, feelings, and actions cyclically planned to reach their personal targets (Zimmerman and Campillio, 2003).

In general, self-regulated learning incorporates students' motivational beliefs, as well as cognitive and meta-cognitive learning strategies. It requires different processes: self-observation, self-judgment, and self-reaction. In this process, planning, managing time, attending to and concentrating on instruction, using cognitive learning strategies, building a productive study environment, and making use of social sources are crucial. In addition to these, strategies for evaluating motivational processes like setting performance goals and outcomes, holding a positive attitude about one's capabilities, and evaluating learning, its outcomes, and positive experiences that can affect learning have a considerable role. Students, therefore, should possess the knowledge and skills for self-regulated learning that include self-awareness, self-motivation, and behavioral skills. The skills incorporate (a) setting specific proximal goals for oneself;(b) adopting powerful strategies for attaining the goals;(c) monitoring one's performance selectively for signs of progress;(d) restructuring one's physical and social context to make it compatible with one's goals;(e) managing one's time use efficiently;(f) self-evaluating one's methods;(g) attributing causation to results; and (h) adapting future methods (Zimmerman, 2002).

Generally, students' employment of self-regulated learning strategies is deemed to increase their success in learning the English language in general, and reading in particular; otherwise, lack of them may result in anxiety, stress and failure.

Rationale

Reading is an essential skill and probably the most important skill for second or foreign language learners (Grabe, 1991). It is an interactive and complex process influenced by linguistic and cognitive, social and cultural, and affective and motivational factors (Lu, 1989). Students are required to understand the meaning of a text, critically evaluate the message, remember the content, and apply new knowledge flexibly (Brown & Campione, 1990; Pressley, 2000).

According to current theories of learning, to comprehend a text, individuals invent a model that helps them organize the information from a text in a way that makes sense to them and fits their prior knowledge. That course of action entails a dual cognitive process in which the reader builds relations (a) among the parts of the text, and (b) between the text and his or her prior knowledge and experience (King, 1994). Hence, to derive meaning from a text, readers rely on both text-driven and knowledge-driven processes (Goldman & Rakestraw, 2000). This reliance implies that an active reader constructs meaning through the integration of existing and new knowledge, and the flexible use of strategies to foster, monitor, regulate, and maintain comprehension (Alexander & Jetton, 2000). Applying such strategic behavior in reading requires learners' intentional engagement in planned actions under their control (Alexander, Graham, & Harris, 1998; Snow, Corno, & Jackson, 1996). It also requires readers to become cognizant of their performance limitations, intentionally weigh their options, and willfully execute compensatory procedures, all of which require commitment of time and

mental energy (Garner, 1987). Thus, comprehension instruction necessitates teaching students multiple strategies that will allow them to develop a sense of conscious control of their cognitive processes; that is, self-regulation (Pressely, 2000; Roehler & Duffy, 1991).

Research indicated that the reading ability of Ethiopian secondary and tertiary level students is deteriorating over time (Gebremedhin, 1993; & Gessesse, 1999). Moreover, appraisals such as the National Learning Assessments (NLAs) conducted in the years 2000, 2004, and 2007 by the National Organization for Examinations (NOE) indicated that the English language scores of students both at grade four and grade eight have been below the standard set by the government, i.e., 50%. Similarly, the first National Assessment of Grades 10 and 12 in 2010 revealed that in both 10 and 12 grades, the mean score for English was below the minimum requirement. The percentages achieving 50% and above were only 17.8% for grade 10, and 25.9% for grade 12. In all the examinations, reading takes relatively a higher proportion, next to grammar. It is conspicuous that reading activities, like other language activities, require self-regulation because they challenge students to coordinate multiple types of information. In brief, the assumption is that partly students' lack of responsibility; that is, their lack of self-regulated learning has contributed to the students' failure in the national examinations.

The aim of this study was to investigate how high school students' reading performance can be explained in terms of motivational beliefs (intrinsic goal orientation, extrinsic goal orientation, task value, and self-efficacy), and cognitive self-regulated components (cognitive strategy, and meta-cognitive self-regulation). More specifically, the present study addresses the following major questions:

1. What are the self-regulated learning (SRL) strategies and beliefs of high school students?
2. How are the motivational and cognitive components related to the reading performance of high school students?
3. Are motivational beliefs (intrinsic goal orientation, extrinsic goal orientation, and task value) significant predictors of high school students' reading performance?
4. Are cognitive self-regulated learning strategies (cognitive strategies, and meta-cognitive self-regulation) significant predictors of high school students' reading performance?

Methodology

Participants

The participants of this study totaling 120 were randomly selected from a population of about 2,000 grade 9 students at Tana Haiq and Fasilo High schools in Bahir Dar Town Administration of the Amhara Region. The participants responded to the Motivated Strategies for Learning Questionnaire (MSLQ), but only 107 responses were valid. The 107 (M=57; F=50) participants were also required to take a reading test that was developed by the researchers.

Instruments

Three instruments- questionnaire, a test and interview- were used to gather data from students. A description of each of the instruments is given below.

Motivated Strategies for Learning Questionnaire (MSLQ)

Motivated Strategies for Learning Questionnaire (MSLQ) was used to solicit information about participants' self-regulatory skills such as motivation, self-efficacy, task value, goal-orientation and cognitive strategies. The questionnaire was adapted from Pintrich and DeGroot (1990). The motivational scale consists of 9 *self-efficacy* items (e.g. I expect to do very well in English class.), 6 items for *task value* (e.g. I think all that I am learning in English class is useful for me to know.) and *goal-orientation* (e.g. I prefer class work that is challenging so I can learn new things). The strategy scale consists of 9 items for the use of *cognitive self-regulated strategy* (e.g. When I read materials in English class, I say the words over and over to myself to help me remember.), and the use of *meta-cognitive strategy* (e.g. I ask myself questions to make sure I know materials I have been studying.). Participants were asked to complete the questionnaire items on a 5-point Likert scale that ranges from 1 (I strongly disagree) to 5 (I strongly agree). The questionnaire was translated into Amharic, the official language of Ethiopia and the national language of the Amhara Region, to avoid the linguistic barrier participants may encounter in comprehending the items.

Reading test

A reading test that constituted 24 items was developed by the researchers to gauge the participants' reading proficiency emphasizing on reading comprehension and vocabulary, as has been the practice in English as a Foreign Language (EFL) instruction in senior high schools in Ethiopia. Of the 24 items, 19 focused on reading comprehension and references. The computed Cronbach alpha reliability of the reading test items has indicated a coefficient of 0.66. The items used in the test were true/ false, multiple choice and completing the missing elements. The test was prepared in line with the students' textbook and was evaluated by two English teachers of the schools who were attending their postgraduate (M. Ed) study in the Teaching of English as a Foreign Language (TEFL). It was administered in both schools at the same time with the help of two teachers in each school.

Interview

Interview questions were used to assess the self-regulated learning strategies of high school students. The questions were developed by the researchers and commented on by two teachers who taught the grade level. Six students, three from each school, were selected randomly (using simple random sampling technique) for the purpose.

Data analyses

The researchers used mixed approach (qualitative and quantitative) analyses techniques. The interview results were narrated; while correlation and multiple regressions were used for the statistical analyses.

Findings

The relationship between students' self-regulation learning strategies and their reading performance

One of the objectives of this research was to see whether or not there exist statistically significant relationships between students' motivation and their reading performance. It also sought to find out whether or not the students' cognitive factors and their reading performance correlate. In order to see the relationships, Pearson's Product Moment Correlation was calculated. The result is indicated in Table 1 below.

Table 1
The Relationship between Students' Self-Regulated Learning (SRL) Strategies and their Reading Performance

<i>SRL strategies</i>	<i>Variables</i>	<i>Reading Performance</i>
Motivational	Self-efficacy	-0.062
	Intrinsic Goal Orientation	- 0.144
	Extrinsic Goal Orientation	0.061
	Task Value	0.061
Cognitive	Meta-cognitive Self-Regulation (MCSR)	0.227*
	Cognitive Strategy Use (COGST)	0.301*

*correlation is significant at $p < 0.05$.

As shown in the above table, the correlation between each of the variables of motivational components (self-efficacy, $r = -0.062$; intrinsic goal orientation, $r = -0.144$; extrinsic goal orientation, $r = 0.061$; and task value, $r = 0.061$) and the reading performance of high school students was non-significant. This was inconsistent with previous researches which indicated that students' self-efficacy is positively related to their academic achievements in general and the achievement of language skills in particular (Huang & Chang, 1998; Pajares & Valiante, 1997; Pajares, Miller & Johnson, 1999). The correlation between cognitive strategy use and students' reading performance ($r = 0.301$), however, was positive and statistically significant at $\alpha = 0.05$ level. Similarly, the relationship between students' meta-cognitive self-regulation and their performance ($r = 0.227$) was also positive and significant. This indicates that students who were cognitively engaged in memorizing, organizing, and transforming what they have learned scored in reading better. This is in line with previous research results which indicated the existence of a positive relationship between students' use of SRL strategies and their academic achievement (Pape & Wang, 2003).

The impact of SRL strategies on students' reading performance

Since students' cognitive self-regulatory strategies significantly correlated with their reading achievement, regression statistics was computed to see which of the components significantly predict their reading performance. The result is depicted in Table 2 below.

Table 2

Summary of the Regression Results of Cognitive Self-Regulatory Components

<i>Components</i>	<i>B</i>	<i>Beta</i>	<i>t</i>	<i>Sig.</i>	<i>R² = 106</i>
MCSR	0.439	0.133	1.323	0.189	<i>Adjusted R² = 0.88c</i>
COGST	1.012	0.251	2.503	0.014*	

*significant at $p < 0.05$.

Predictor: COGST (Cognitive strategies);

Dependent Variable: Reading performance

The absence of statistically significant correlation between the students' motivational components and their reading performance (Table 1) was considered as self-explanatory that none of the components could predict students' performance. Thus, regression analysis was computed only for the cognitive components which significantly correlated with students' reading performance. As shown in Table 2 above, the cognitive strategies were found to be positive significant predictors of students' reading ability. The result shows that the significance level of COGST was 0.014, which is less than 0.05 ($\alpha < 0.05$) confidence level; and thus significantly predicting students' reading achievement. The R^2 value of .106 indicates that both the MCSR (Meta-cognitive self-regulation strategies) and COGST (Cognitive strategies) determine the students' reading performance by 10.6%. The stepwise analysis showed that COGST alone impacts on the students' reading achievement by 9.1%.

Students' beliefs and use of SRL strategies

Six students, three males and females, were interviewed to assess their beliefs and use of SRL strategies, and their responses were reported in narration as indicated below. The interviewees were given pseudonyms.

Jerusalem/Female/

Jerusalem organized and set goals for her assignments. She illustrated her self-talk in stating, "I have to do the work and I can't let it go, but I can't always be perfect." She self-evaluated her progress, attributing her weakness to her failure of self-reflection. She acknowledged that her unsatisfactory performance resulted from her insufficient preparation for tests; and she noted that her future success depends on making education her priority. She recognized the value of rewards after completing a challenging assignment. Her goal was evident as she aspired to become a Lawyer rather than a Medical doctor as her future career.

Ruth/Female/

Ruth continuously self-evaluated herself and noticed that she was never pleased with her performance, though she realized that it was not because of her lack of ability. She thought intensive organization and transformation, as well as rehearsal and memorization would bring her success and self-satisfaction. She conceded that she worked best under pressure, and thus she set up her time and resource utilization in which she could review her records in an effort to improve her knowledge and performance. This year she has raised her goals: "I have raised my minimal goals, and I expect more out of myself." Ruth's self-satisfaction in attaining high English grade was an evidence for her self-satisfaction in her task completion and attribution to her ability to deal with 'a difficult subject'. Her goal orientation was clearly stated in her advice to younger students that even though they might sometimes fall behind, they must never give up. She used proximal and distal goal setting in her need to earn a university degree with 'distinctions'.

Ephrem/Male/

Ephrem viewed himself as a student who set goals, yet he was concerned with perfection and achieving excellence in his work. His SRL strategy was setting deadlines for his academic assignment, not only during the school year but also in the summer so that he could complete his assignments. His primary proximal goal is joining preparatory school, while his distal goal is to study Medicine at Gondar University. As evidenced by his outstanding portfolio, Ephrem was adept at information seeking, rehearsing and memorizing. His time and resource use involved working "in small spurts punctually." He used the strategy of reviewing his class notes daily, and memorizing pertinent facts.

Ephrem has never missed an assignment or received an unsatisfactory evaluation in his class; and yet, he felt he needed to work harder on mastery goals, and was not satisfied with just his performance. Ephrem was successful in all the SRL strategies, but he was still anxious about meeting his own high standards. His motivation and current success appeared to be lessening his need to be an over striver. He was somewhat shocked of his success in meeting his proximal goals by the end of the semester, while at the same time spurring his efforts to successfully combine his mastery and performance goals.

Teddy /Male/

Teddy's self-evaluation revealed that his experiences in his elementary and middle-school education have given him the foundation for practicing SRL strategies. His proximal and distal goal setting and planning were clear; he not only wanted to join preparatory level education, but also sought to join a university. He alluded to the need for improving his environmental structuring and turning assignments in on time, but at the same time he was not anxiety-ridden or constantly worried about his results. He valued seeking information from different sources such as writing his assignments, and social assistance from his peers and his teachers. He viewed the need to keep records and self-monitoring as analogous to practicing for a sport: all requiring hard work; otherwise, he would suffer from failure in education. In self-evaluating and reviewing his records, he felt he had learned many different skills through his goal setting and planning.

Frehiwot /Female/

Frehiwot was not a self-regulated individual and attempted only few SRL strategies. Her self-evaluation reflected that she had competence, but lacked time because of other priorities. She stated she could handle realistic expectations of the program and the teachers. She did not view her lack of environmental structuring as negative, but simply felt that other activities had more intrinsic value than the school requirements and curriculum. She did not use rehearsing and memorizing, nor record reviewing because she was a "perfectionist," and if she did not meet that particular standard, then she "would not turn in the work." When reviewing records, she stated that the only learning strategy she used was to "study more and perhaps make a chart." Her focus was on maintaining her self-worth, rather than being self-efficacious in being persistent, or in seeking social or non-social assistance.

Daniel /Male/

Daniel stated he wanted to be the "ideal" preparatory student and practiced the SRL strategies necessary to succeed in the program, but lacked in the motivation to do so. As a performer he was truly "comfortable" and at ease in relying on social assistance, both with his peers and his teachers; but still he exhibited anxiety when he classified himself as an under-achiever. The attention he received as the intelligent "professor" with a vast store of knowledge was rewarding and one he would not like to give up. His time management was weak; due dates were seldom met, final drafts were error-ridden, and keeping records, as well as rehearsing and memorizing was not in evidence. He was aware of the self-consequences and felt "defeated;" but stated that because he was more interested in "learning" than in performing, it was difficult for him to exert the effort to improve his weak SRL strategies. He was insistent about the stress factor, and repeatedly stated that he needed the stress of external regulation and assistance from his peers and his teachers in order to become motivated, even though he was fully aware of the negative consequences of his procrastination.

Discussion

The first research question inquired about the students' beliefs and their strategy use in reading. Information about this was obtained through interview. The interview results showed that the most common SRL strategies the majority of the interviewees (four of them) used across different assignments and assessments were social assistance (asking for help), goal setting, seeking information, and environmental structuring. The interviewees considered 'social assistance' as the most positive factor for them to succeed in their high school curriculum. Goal setting and planning were evident in each student's daily career. They viewed achieving the proximal goals of their class assignments, and future goal of achieving a university degree. All but one thought that their goal setting and planning helped them to succeed in their academic pursuits. Self-efficacy was evident in four of the six students, and the fifth (Daniel) was aware that persistence and effort were necessary for him to continue his education. Four of the six interviewees had the determination for persistence in goal setting despite environmental distractions and time constraints. Four of the interviewees used their meta-cognitive strategies combined with other SRL strategies ranging from a cycle of forethought, performance, and self-reflection to their continuing self-satisfaction in their high school. Reviewing records, or self-evaluation was seldom, but it was clear that they were continually measuring their progress regarding their current results and continuous assessment requirements: performance and mastery were integrated in this sense.

The second question wanted to ferret out whether or not motivational and cognitive strategies significantly correlated to students' reading performance. The findings revealed that the motivational variables (self-efficacy, intrinsic and extrinsic orientations and task value) were not significantly correlated with students' reading performance. This result was unexpected, and was inconsistent with previous researches. For example, Shell, Murphy and Bruning (1989) found self-efficacy (a motivational variable) to be a predictor of outcome expectations and achievement in reading and writing. It was also found that efficacious students read more (Wigfield & Guthrie, 1997) with greater comprehension (Anderson, Wilson & Fielding, 1988). Similarly, Zimmerman, Bandura, and Martinez-Pons (1992) added that academic self-efficacy influenced achievement directly and indirectly raising students' grades. That is, when there is academic self-efficacy or self-perception of competence, the students succeed in their English language performance. There also existed a negative non-significant correlation among intrinsic motivation, task value and reading performance; and this shows that the students were not internally motivated to reading, and presumably wanted only to get good grades. It seems that they assumed their school tasks were less important and boring. The current result is inconsistent with expectancy-value researchers (e.g., Pintrich, 1999; Pintrich & Garcia, 1991; Pintrich & Schrauben, 1992) who proposed that when task value or interest is high, students will use more learning strategies and use them more often than when interest is low. High task value leads to more involvement in a student's learning (Pintrich, 1999). However, in this research, students' task value was not very high and this result was not consistent with Pintrich's research. Pintrich indicated that task value beliefs were significantly correlated with students' performance though the relations were not as strong as those for self-efficacy (Pintrich, 1999). Furthermore, there was a non-significant positive correlation between internal and external goal orientations and students' reading achievement. Researches indicated that intrinsic goal orientation to learning leads to better academic achievement (Pintrich & Garcia, 1994). However, the results in this study indicated that the participants of the study lacked this orientation. The reason for motivational factors to contribute little to students' reading achievement can be the low confidence level of students that resulted from teacher-dominated classes. Students were highly dependent on their teachers to learn, as it has been the dominant approach to learning in Ethiopia (Abiy, 2005). Though there is currently a paradigm shift towards student-centered approach on policy basis, the impact of the past tradition of teaching/ learning still affects the students' learning

behavior. The system presumably did not encourage them much to be self-efficacious, goal setters and users of learning strategies giving value to tasks..

Analysis of the correlations between cognitive strategies and students' reading performance revealed that there is a significant positive relationship between students' use of meta-cognitive self-regulation strategies and their reading achievement at the high school level. This finding is supported by other researches which link meta-cognition with effective learning and academic achievement (Pintrich, Smith, Garcia & McKeachie, 1993; Mayer, 1996; Pintrich, 2002, Wolters and Yu, 1996; and others). This finding is also in line with researches that suggest meta-cognitive strategies enable students to become effective learners (Zimmerman & Martinez-Pons, 1986). Haller, Child and Walberg (1988) have also evidenced the impact of teaching meta-cognitive skills on reading comprehension. Since Self-regulated learners utilize meta-cognitive strategies especially at times of high cognitive demand such as during the initial learning stages or while troubleshooting a particular task (Paris & Paris, 2001), it is vital for teachers and parents to promote their students' meta-cognitive abilities to help them read effectively. Students' cognitive strategy use was also significantly correlated with their reading performance; that is it has contributed a lot to their reading performance. This finding is in agreement with Camahalan (2006), Dresel and Haugwitz (2005), Eshel and Kohavi (2003) and others' views that cognitive strategies increase students' success. The interview results reported above could attest that students use the cognitive and meta-cognitive strategies, though in varying degrees.

The regression analysis indicated that only the cognitive strategies significantly predict students' reading performance. The cognitive strategies that include rehearsal, elaboration and organization were found to be statistically significant at $\alpha=0.05$ with a Beta value of 0.251. As depicted in Table 2, both COGST and MCSR predict students' reading performance by 10.6%. Of this, as the stepwise regression statistics show, COGST predicts it by 9.1%. This implies that MCSR predicts it by 1.5 %. These results clearly indicate that other factors than COGST and MCSR determine much of the students' reading performance. As Ehrlich *et al* (1993) found cognitive, meta-cognitive and motivational factors significantly predict students' reading comprehension ability. This result differs from the results found in the present study. As stated above, the meta-cognitive strategies do not significantly predict students' reading achievement. This was also true for the motivational factors. The agreement observed between Ehrlich *et al's* (1993) and the present study's result is the influence of the cognitive strategies on students' reading achievement.

The possible cause for the cognitive strategies to significantly effect on the students' reading achievement may be the cultural influence and the students' past learning experiences. The conception of reading in Ethiopian schools is memorization and students learn reading in a similar way as they learn other content area subjects (Abiy, 2005). The teaching/learning has been much teacher-dominated, leaving little or no room for students to plan, monitor and evaluate their learning. Hence, the findings may relate with these experiences in Ethiopian schools.

Conclusions and recommendations

Though the interview results indicated that the interviewees used some of the self-regulatory strategies, the strategies were not well-developed. Based on Pearson's correlation result, it was possible to conclude that the motivational variables did not contribute much for the participants' reading performance. The cognitive variables, on the other hand, had significantly contributed to their reading performance. Among the cognitive variables

themselves, only their cognitive strategy use was a significant predictor of the participants' reading performance. To put it in a nutshell, the motivational variables, and the Meta-cognitive strategies were not significant predictors of students' reading performance. Therefore, the researchers recommend that teachers mediate on students' development of self-efficacy, task value and goal orientations as well as meta-cognitive strategies (planning, monitoring, etc.) so that they can become self-regulators.

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