

The Effectiveness of Structured Learning on Self-Regulated Development and Academic Achievement

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Abstract: This research aimed at investigating the effectiveness of the integration of self-regulated learning strategies in learning specifically in academic writing of EFL college students. Main research questions were asked: (1) To what extent will students' self-regulated strategy use be improved? (2) To what extent will students' academic achievement be affected by the self-regulated learning strategies? The sample of the study was divided into an experimental group and a control group, each of which contained 20 students. A quasi-experimental pre-test post-test control group design was employed (both qualitative and quantitative). Pedagogical implications of the study were discussed.

Keywords: self-regulated learning, academic achievement, goal setting, planning, keeping records, monitoring, reviewing, asking for help.

INTRODUCTION

EFL freshmen learners are overwhelmed by the magnitude of the responsibilities that they have to do at university specifically of learning. Being fresh from school, their high school academic behavior still perseveres [1]. As enrollees in the Foundation program of the English Language Centre of the university, they are expected to develop their linguistic proficiency through extensive practice in all the language skills needed in various academic situations and the labor market. Additionally, they must be able to attain an advanced level of competency in critical thinking, communication and study skills. The expectations are magnanimous in nature for EFL learners are still inadequately ready for the personal responsibility of handling their own learning [2].

Writing tasks in the Foundation program is immense. The difficulty of the compositions depends on their respective levels. Aside from composing in classrooms, they also have homework to do. Teachers usually face difficulties in collecting quality outputs for most of the students do not / cannot comply. Most of them feel bored and lose interest in doing the prerequisites. They lack appropriate learning strategies to accomplish their writing tasks. They do not use effectively the extensive learning resources that the university offers or their personal resources. They do not reflect and monitor their development toward learning goals as well [3]. However, this is not limited to poor performing students. College level learning undertakings entail diverse skills and bigger personal

accountability. Even bright students who have better learning strategies than their peers in middle and high school may reach the ceiling of their strategic ability in college where more active learning strategies are required [4].

One way of helping students to write better is through "Self-Regulated Learning" (SRL). SRL is largely regarded as one of the best predictors of learning and personal improvement [5-7] because "learning is not something that happens to students; it is something that happens by students" [8]. Therefore, there is a need for teachers to bring back to consciousness of the learners [9-12] the more dynamic self-regulated learning strategies which were not explicitly imparted in most high school curricula [13]. Since to some extent SRL is a content dependent activity [14] it is appropriate to say that emergent student writers at universities must be more exposed to effective cognitive and metacognitive strategies for them to be language proficient and to have a high probability of success in their academic and professional life [15].

Bandura's [16] social cognitive theory views human functioning as reciprocal interactions between behaviors, environmental variables, and cognitions.

Relatedly, Zimmerman [17] described self-regulated learners as metacognitively, motivationally, and behaviorally active participants in their own learning processes and in achieving their own goals.

They set standards or goals to strive for in their learning, monitor their progress toward these goals, and then adapt and regulate their cognition, motivation, and behavior that increase perseverance in order to reach their goals [18]. They actively avoid behaviors and cognitions detrimental to academic success [19].

The interdependent self-regulatory process is represented according to a three-phase cyclical model encompassing forethought, performance, and self-reflection [17].

In the forethought phase, student writers set goals and sub goals on what they want to achieve in their writing class specifically on the writing tasks that are given to them. Next is planning which is often before writing and sometimes also while writing. If for example, the task is to write a comparison and contrast essay, they need first to understand the audience, state the purpose, collect information (through brainstorming, ladders, reading, interviewing, among others), organize the information obtained, decide what learning strategies to use to complete the task, review the writing conventions, and make up a writing timetable [20].

In the performance phase, student writers keep records, e.g. by taking down notes of the discussion in class; by recording the mistakes that they made and the positive and negative feedback from their teachers and peers; and the strategies they used. They monitor global aspects such as content, organization, coherence and cohesion and local aspects such as grammar (including sentence structure), mechanics (punctuation and spelling) and lexis [20].

In the self-reflection phase, student writers reflect on the quality of their completed composition with focus on their goal progress and the effectiveness of the strategies that they chose. During this stage, they must also manage their emotions about the results of the learning experience. These self-reflections then shape student writers' future goals and planning, launching the cycle to begin again.

Consistent with Cohen [21] the purpose of SBI is to clearly teach learners how to apply learning and language use strategies. Furthermore, SBI lets the learner to: (a) self-diagnose their strengths and weaknesses in their learning process; (b) become more aware of what helps them to learn most efficiently; (c) develop a broad range of problem-solving skills; (d) experiment with both familiar and unfamiliar learning strategies; (e) make decisions about how to approach a language task; (f) monitor and evaluate their own performance; and (g) transfer successful strategies to new learning contexts.

There have been several studies about the effects of self-regulated learning on academic achievement in English courses.

Zimmernan and Kitsantas [22] studied the observation and emulation procedure in writing. Their study revealed that students enhanced their writing techniques using the two strategies. As the student writer advances, he reaches the stage of self-control because he cultivates his own strategies such as planning and self-monitoring. When he can adapt his own strategies based on some necessary conditions like changing tasks, audience, and intrapersonal states, he becomes self-regulated. He needs to maintain his interest in the writing composition task and processes as well as specific self-regulation components such as memory strategy, goal-setting, self-evaluation, seeking assistance, environmental structuring, responsibility, and organizing.

Merki [23] explored the effects of the execution of state-wide exit exams on students' self-regulated learning in Mathematics or English. The scholar led a standardized questionnaire survey of students in two German states, Hesse and Bremen, for three years. In mathematics no significant effects of the immediate introduction of state-wide exit exams were identified. In English the results for Bremen showed a significant positive effect of the introduction of state-wide exit exams on the use of elaboration strategies when preparing for the exams and on interest in the school subject. The quality of instruction seems to have improved more in the advanced courses in English than in the advanced courses in mathematics.

Seker [24] investigated learner reported use of SRL, focusing on its three main components--orientation, performance, and evaluation--and their power in predicting foreign language achievement. Two hundred twenty-two (222) undergraduate foreign language learners at a state university participated in the study. Data was collected from two sources: a five-point Likert-type self-regulated language learning questionnaire, adapted from models and research instruments used in previous studies to investigate SRL and language learning strategies, and the university's English achievement exam. Outcomes indicated that even though participants stated moderate to low levels of SRL use, it is a noteworthy predictor of foreign language attainment and had noteworthy correlations with language attainment.

El-Sakka [25] aimed to investigate the effects of self-regulated strategy instruction for developing speaking proficiency and reducing speaking anxiety of Egyptian university students. The design of the study was a one group pre-post-test quasi experimental design. Forty 3rd year EFL university students were

selected to form the experimental group of the study. This experimental group was tested using the pre-post speaking test and speaking anxiety scale before and after being exposed to the self-regulated strategy treatment. The experiment lasted for three months during the first term of 2015-2016 academic year. Paired-samples t-test revealed significant differences between the pre-test and post-test of speaking proficiency as well as speaking anxiety in favor of the post-tests. Additionally, a negative correlation was shown between speaking proficiency and speaking anxiety.

This inquiry and the cited academicians' studies [23-25] had the same general nucleus which was the academic success in English of learners. Merki [23] based her inquiry on state-wide exit exams in Mathematics and English while Seker [24] and the researchers in this study based solely on college-wide exit exam in English composition. El-Sakka [25] and this study both deployed the same research method but concentrated on different skills respectively. This study and the explained inquiries [23-25] derived the same conclusion that teaching self-regulated strategies to university students is effective in developing their proficiency in the English language.

Research on reflective writing via self-regulated learning strategies mediation to achieve scholastic performance has been numerous.

Chang [26] examined whether reflective writing using e-portfolios enhances high school students' self-regulated learning. Participants included two classes of eighth-graders majoring in Information Processing and taking a course called "Website Design" at a vocational high school in Taiwan. There were 41 students, with 18 males and 23 females. The experiment lasted 10 weeks, and students used e-portfolios to reflect on their learning. The results bared that students after using e-portfolios to reflect on their learning had significantly better self-regulated learning than before. This implies that reflective performance had a significantly positive effect on self-regulated learning.

Moreover, Liang [27] designed reflective writing mechanisms in a web-based portfolio assessment system and evaluate its effects on self-regulated learning. Participants were two classes of juniors majoring in data processing and taking a course called "Website design" at a vocational high school in Taiwan. One class was randomly selected and assigned as an experimental group (41 students) reflecting on learning processes through a web-based portfolio assessment system, whereas the other class was assigned as a control group (41 students) reflecting on learning processes through a paper-based portfolio. The result revealed that self-regulated students reflecting on

learning processes through a web-based portfolio assessment system significantly outperformed students reflecting on learning processes through a paper-based portfolio in self-regulated learning.

Similarly, Jado [28] aimed to investigate the effects of using learning journals on self-regulated learning and reflective thinking among a sample of pre-service teachers enrolled in Educational Psychology course at the Faculty of Educational Sciences and Arts (FESA) in Jordan. The study sample consisted of 61 participants. Self-regulated learning and reflective thinking scales were made use of after verifying their psychometric properties on the study sample. The findings of the study indicated that there are statistically significant differences between the means of the subjects' responses on the domains of the reflective thinking scale in the pre- and post-tests in favor of the experimental group. The results also revealed that there are statistically significant differences among the means of the subjects' responses on the domains of self-regulated learning in the pre- and post-tests.

This scholarship and theirs [26-28] used a quasi-experimental design and provided a computer-supported instructional setting. The newness about their explorations [26-28] on reflective writing was the outputs were all online. This study was a combination of paper and pencil and online outputs but did not exclusively focus on reflective writing. In teaching the experimental group of this study, the researchers used different online presentations about the topic; used the Moodle e-learning portal and online student response systems (OSRS) such as Socrative, infuse learning and quiz socket. Results of all the studies in favor of the experimental group disclosed that the application of suitable self-regulated learning strategies to teaching learners helped in realizing the shared aim.

In addition, Al-Rawahi and Al-Balushi [29] investigated the effectiveness of grade-ten students' reflective science journal writing on their self-regulated learning strategies. They used a pre-post control group quasi-experimental design. The sample consisted of 62 tenth-grade students (15 years old) in Oman, comprising 32 students in the experimental group and 30 students in the control group. Both groups studied a science text unit called 'Matter and Energy in Chemical Reactions'. Students in the experimental group were given a model for a journal, which they wrote after they finished their science lessons. The control group studied the same unit without writing reflective journals. The researchers used a modified self-regulation strategy instrument to measure the effectiveness of treatment. The results showed that participants in the journal-writing group significantly outperformed participants in the control group with respect to their self-regulation strategies.

Al-Rawahi and Al-Balushi [29] and this analysis both probed about students writing students' self-regulated learning strategies by applying the pre-post control group quasi-experimental design. This study pivoted around the English course while theirs [29] was around Science. Both studies concluded that student writers must be given a relevant setting so that they would be able to apply the learned self-regulated strategies.

The succeeding studies are about English writing compositions on various genres.

Evmenova, *et al.* [30] piloted a multiple-baseline study to investigate the effects of a computer-based graphic organizer (CBGO) with embedded self-regulated learning strategies on the quantity and quality of persuasive essay writing by students with high-incidence disabilities. Ten seventh- and eighth-grade students with learning disabilities, emotional and behavioral disorders, attention deficit hyperactivity disorder, and autism spectrum disorder participated in the study. In a visual analysis, all participants enriched the quality of their writing, and the majority of students also augmented the quantity of their writing.

In the same vein, Asaro-Saddler & Bak [31] scrutinized the effects of a persuasive writing and self-regulation strategy on the writing of children with autism spectrum disorders (ASD). Six children with ASD worked in pairs to learn a mnemonic-based strategy for planning and writing a persuasive essay using the self-regulated strategy development (SRSD) approach. Post intervention analysis exposed growths for all students in number of essay elements and holistic quality. Evidence of planning and self-regulation performances was also noted.

Hacker, *et al.* [32] evaluated a quasi-experimental study of the short-term and maintenance effects of the self-regulated strategy development writing instructional model by Graham and Harris with 7th-grade students in an urban, ethnically diverse Title I middle school. The academics compared the writing skills of their intervention students with those of students in a control school. For five weeks, they coached teachers at the intervention school in a strategy for persuasive writing. Teachers at the control school also taught persuasive writing but used traditional instruction. There were no differences between the two groups from pre-test to post-test; however, scores between post-test and maintenance showed that the self-regulated strategy development students scored significantly higher than students in the control school.

Brunstein & Glaser [33] drafted to detect, through mediation analysis, potential causal

mechanisms by which procedures of self-regulated learning increase the efficaciousness of teaching young students strategies for writing stories. In a randomized controlled trial with three measurement points (pre-test, post-test, maintenance), 117 fourth graders either received self-regulatory writing strategies training or were taught writing strategies without self-regulation procedures. Path analyses indicated that relative to teaching writing strategies alone, teaching strategies in tandem with self-regulation procedures improved students' skills of planning and revising stories and thereby enhanced the quality of the resulting stories. Self-regulated learning also enhanced students' knowledge about good writing and strengthened their self-efficacy beliefs, which both had a positive effect on the use of the learned strategies while planning narratives.

Zumbrunn & Bruning [34] probed the effectiveness of implementing the Self-Regulated Strategy Development (SRSD) model of instruction on the writing skills and knowledge of six first grade students. A multiple-baseline design across participants with multiple probes was set up to examine the effectiveness of the SRSD mediation, which included story writing and self-regulation strategy teaching. Results indicated that SRSD can be beneficial for first grade writers because participants were able to write stories of better quality.

The first group of investigators [30-32] directed their investigations on young learners who had been trained to become persuasive essay writers while the second group of investigators' [33-34] had been trained to become story writers. Positive outcomes were derived in accord with the experimental group which clearly showed that being able to apply self-regulated learning strategies to an interesting and helpful task would increase learners' self-efficacy views and so improve their scholastic standing. The examiners [30-34] and this study applied self-regulated writing strategies in instruction to cultivate the subjects' skills and be autonomous lifelong learners eventually.

Hsiao, *et al.* [35] operated a self-regulated learning system to help learners in putting to use WebQuest learning in a self-regulated learning pattern as well as to give teachers opportunities to monitor and assist students' performance. The participants in the study were sixth graders of an elementary school in Taipei County, Taiwan. The experimental group and the control group were consisted of three classes respectively. Learners' self-regulated behavior was observed and analyzed based on the system records as well as their behavior in the learning process.

Kauffman, *et al.* [36] explored conditions under which note taking methods and self-monitoring

prompts are most effective for facilitating information collection and achievement in an online learning environment. In the first experiment, 130 undergraduate educational psychology students collected notes from a website using an online conventional, outline, or matrix note taking tool. In the second experiment, 119 students collected notes from a larger, more ecologically valid set of learning materials using the matrix instrument. One half of the students also received prompts intended to boost self-monitoring. Results of both experiments showed that the matrix note taking device was a superior tool for collecting information and for achievement.

The preceding investigations' framework [35-36] for investigating was collecting online information on a topic given in a self-regulated learning pattern. The first study, having sixth graders as sample needed the monitoring of their teacher while the second, having undergraduate students, emphasized the use of self-monitoring. In this study, self-monitoring was a vital part of writing compositions for learners to be self-conscious about their performance so as not to depend on their mentors' feedback most of the time. Encouraging results were gathered from this study and in Hsiao, *et al.* [35] and Kauffman's, *et al.* [36] studies as well.

MacArthur, *et al* [37] assessed the effects of a curriculum for college developmental writing classes, established in prior design research and founded on self-regulated strategy instruction. Students studied strategies for planning, drafting, and revising compositions with a focus on using knowledge of genre organization to guide planning and self-evaluation. Furthermore, students learned self-regulation strategies. This quasi-experimental study involved 13 instructors and 276 students in 19 developmental writing classes at two universities. Significant positive effects were noted for overall quality of writing on a persuasive essay, and for length, but not for grammar.

Díaz [20] implemented a strategies-based instruction on the Metacognitive Writing Strategies of Planning, Monitoring and Evaluating integrated to the regular classes of the subject English Language II in an English Teacher Training College in Argentina. She also studied its effects on the students' strategy use and on their writing performance through a quasi-experimental design following a single group pre-test + post-test + delayed post-test design. Data were collected by means of self-report questionnaires, diary entry tasks, a survey, and writing tests. Findings show that at post instruction the participants began employing a greater number of Planning, Monitoring, and Evaluating strategies, and they were able to focus on both global and local writing features when monitoring and evaluating their compositions.

Their inquiries [20,37] and this research both focused on college academic writing classes based on self-regulated strategy instruction. The samples both underwent three stages of writing with an emphasis on planning, monitoring and evaluating. However, in the present study, five (5) structured strategies were specifically employed: goal setting, planning, keeping records and monitoring, reviewing and asking for help. Goal setting and planning are two (2) different learning strategies, keeping records and monitoring are inseparable, and asking for help from teachers as well as peers were given emphasis aside from self-evaluation. It is correct to conclude that learning strategies such as planning, monitoring, and evaluating could strengthen writing students' self-regulation.

In spite of the importance credited to the teaching of self-regulated learning strategies in academic writing, there are no available studies about it on foundation level students of the English language program at an Omani university context. This scholarship used a social cognitive lens to investigate the effects of the proposed SRL strategies which are goal setting, planning, keeping records and monitoring, reviewing and asking for help.

STATEMENT OF THE PROBLEM

This study aimed at investigating the effectiveness of the integration of self-regulated learning strategies in learning specifically in academic writing of the students enrolled in the foundation English language program in Omani higher education.

The following were the research questions:

1. To what extent will students' self-regulated strategy use be improved?
2. To what extent will students' academic achievement be affected by the self-regulated learning strategies?

To answer these questions, the following study hypotheses were formed:

1. There are significant differences between the experimental and the control group on the post-test measurement of SRL and academic achievement in favor of the experimental group.
2. There are statistically significant differences between means of scores of experimental group's pre- and post-measurements of SRL and academic achievement variables favoring the post measurement.
3. There are no statistically significant differences between means of scores of the control group of the pre- and post-measurements of SRL and academic achievement.

4. There are no statistically significant differences between means of scores of experimental group of the post- and the follow up measurements of self-regulated learning and academic achievement.

RESEARCH METHODOLOGY

The study used the quasi-experimental pre-test post-test control group design to investigate the effectiveness of the proposed SRL strategies for

developing academic achievement of learners enrolled in writing classes.

Participants

The sample of the study was divided into an experimental group and a control group, each of which contained 20 students.

RESULTS

Table 1: Difference between means of both the experimental and control groups on pre-test

Variable	Group	N	M	SD	DF	T	Sig.
SRL	Ex.	20	25.900	3.762	38	.268	Not
	Con	20	26.1500	2.8149			
Academic Achievement	Ex.	20	68.600	12.431	38	0.013	Not
	Con	20	68.412	11.732			
	Ex.	20	128.071	6.312	38	0.725	Not
	Con.	20	126.841	5.914			
	Ex.	20	76.455	2.974	38	1.043	Not
	Con.	20	69.321	4.078			

As it can be seen from the table, there is no significant differences between means of measurement of both the experimental and the control group on pre-test on all the study variables and on the median variables.

Results regarding the first hypothesis

“There are significant differences between the experimental and the control group on the post-test measurement of SRL and academic achievement in

favor of the experimental group.” To test this hypothesis, two surveys were applied on for the self-regulated learning and the second one for the academic achievement.

The following table shows the summary of (T-test) for the two independent samples of the study, the control and the experimental groups, on the post-test measurement of the study variables.

Table 2: Differences between means of post-measurements of the experimental and control groups

Variable	Group	N	M	SD	DF	T	Sig.	Effect size
SRL	Exp.	20	49.112	7.524	38	12.534	0.001	Strong
	Cont.	20	26.374	3.023				
Academic Achievement	Exp.	20	125.433	16.978	38	11.912	0.001	Strong
	Cont.	20	68.754	12.881				

The table displays that there are statistically significant differences between means of scores of experimental and control groups in the post-test on the academic achievement and self-regulated learning variables favoring the experimental group with strong effect size.

Results regarding the second hypothesis

“There are statistically significant differences between means of scores of experimental group’s pre- and post-measurements of SRL and academic achievement variables favoring the post measurement.”

The following table shows the results of (T test) between the means of the pre- and post-measurements of the experimental group.

Table 3: Differences between means of pre- and post-measurements of SRL and academic achievement of the experimental group

Variable	Measurement	N	M	SD	Md	Std. error	DF	T	Sig.	Effect size
SRL	Pre	20	25.901	3.0762	23.25	6.869	19	15.004	0.001	Strong
	Post	20	49.124	7.534						
Academic Achievement	Pre	20	68.507	12.664	56.84	21.78	19	10.994	0.001	Strong
	Post	20	125.854	16.877						

The table bares that there are statistically significant differences between means of scores of experimental group in the pre- and post-tests on the academic achievement and self-regulated learning variables favoring the post-test. It also shows that there is a strong effect size.

Results regarding the third hypothesis

Table 4: Differences between means of pre- and post-measurements of the control group

Variable	Measurement	N	M	Sd	Md.	Std. error	T	Sig.	Effect size
SRL	Pre	20	26.149	2.8149	0.25	0.487	0.795	Not	Weak
	Post	20	26.400	3.031					
Academic Achievement	Pre	20	68.55	12.842	0.20	0.946	0.107	Not	Weak
	Post	20	68.750	12.554					

As the table displays there are no statistically significant differences between means of measurement of the pre- and post-tests of the control group, as (t) value does not reach the accepted significant level.

Results regarding the fourth hypothesis

“There are no statistically significant differences between means of scores of experimental

“There are no statistically significant differences between means of scores of the control group of the pre- and post-measurements of SRL and academic achievement.”

The following table shows the results of (T test) between the means of the pre- and post-measurements of the control group.

group of the post- and the follow up measurements of SRL and academic achievement.”

The following table shows the results of (T test) between the means of the post- and the follow up measurements of the experimental group.

Table 5: Differences between means of post- and follow up measurements of the experimental group

Variable	Measurement	N	M	Sd	Md.	Std. error	T	Sig.	Effect size
SRL	Post	20	49.123	7.437	0.35	0.944	1.784	Not	Weak
	Follow	20	49.431	7.455					
Academic Achievement	Post	20	126.21	17.012	0.36	1.086	1.544	Not	Weak
	Follow	20	126.944	17.344					

Based on the table there are no statically significant differences between the post- and the follow up measurements of the study variables of the experimental group.

DISCUSSION

This study examined the effects of exploiting different strategies on students' self-regulated learning as well as their academic achievement of a sample of EFL Omani college students enrolled in academic writing. The strategies used contained direct instruction and modelling of self-management, planning, goal setting as well as self-evaluation.

The overall results showed improvement in the students' self-regulated learning and academic achievement as measured by the study's instruments. They agree with Bandura [1] which refer that students can control their learning behavior through their beliefs and therefore produce positive results. Self-regulated process helps make changes in students' learning behaviour. Moreover, the results matched to those studies by Cohen [38] and Pintrich & Garcia [39] which ascertain that strategies can be taught. Cooperation,

organization and resources management are related to goal orientation which affects the students' cognitive awareness level as they tend to use learning strategies more and as a consequence, their performance develop. The proponents claim that teachers could enhance their students' levels of self-regulation through intervention. Generating self-regulated learning environment is one way to make students become independent learners who can enhance their academic performance and supplement their own studies in the future [40-41].

The size of the sample is the limitation of this study. It would be remarkable if future researchers would be interested in studying the effects of the proposed self-regulated writing strategies on a larger sample. The present study focused on goal setting, planning, keeping records and monitoring, reviewing and asking for help.

CONCLUSION

Strategy-focused writing's instruction is beneficial to those learners who tend to focus on the strategies that have been modelled by their respective teachers. However, it is depressing to know that if a

student does not regulate because there is no teacher intervention, he might not change his way of writing and still produce a paper with poor quality. Thus, it is recommended that teachers of writing at the beginning of the semester must conduct an investigation of students' shared difficulties in writing strategies to figure out the weaknesses of their students and even the strengths as well. In this regards, teachers would be able to adjust their target writing goals and the different tasks that would be done in class as well. The suggested strategies in this research in teaching writing could be achievably modified to other EFL writing courses with instructional backgrounds.

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