STRATEGIES AND ACHIEVEMENT

RUBEIZ
THE RELATIONSHIP BETWEEN SELF-REGULATION AND ACADEMIC ACHIEVEMENT IN LEBANESE PRIVATE ELEMENTARY SCHOOL STUDENTS

by

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A thesis submitted in partial fulfillment of the requirements for the degree of Master of Arts to the Department of Education at the Division of Education of the American University of Beirut

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AND ACADEMIC ACHIEVEMENT IN LEBANESE
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AN ABSTRACT OF THE THESIS OF

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The purpose of the following research was to check: (a) if there is any statistically significant relationship between the overall self-regulatory strategies scores and academic achievement, (b) if there is any statistically significant relationship between any of the selected four self-regulatory strategies scores and academic achievement, (c) which of the four self-regulation strategies has relatively more weight in predicting academic achievement, (d) if there is any significant gender-difference in overall use of self-regulation strategies, (e) how would the relationship between self-regulation (total and subtotal strategies scores) and academic achievement compare across type of school, and (f) whether there would be any significant correlation between students' self-regulation scores as reported by students themselves and as reported by their respective teachers. The self-regulation strategies under investigation were the following: (a) goal-setting, (b) self-consequating, (c) self-monitoring, and (d)
reviewing records. GPA was taken as the measure for academic achievement. A review of the literature was then presented.

An overview of the methodology was presented concerning the sampling procedures, administration of the test, and analysis of the results. The instrument was a questionnaire administered to 315 Lebanese fourth and fifth grade students - 8.5 to 9.5 years - representing two school orientations, namely, Lebanese and American. Test-retest reliability coefficient of the instrument after 30 days interval was observed to be $r = .83$ at $p < .001$. Means and standard deviations were calculated for each category. Simple correlation coefficients were calculated to determine whether there existed any significant relationship between (a) overall self-regulation scores and GPA and (b) scores on separate self-regulation strategies and GPA. Multiple regression was performed to see whether any of the four strategies had relatively more weight in predicting GPA. A $t$-test was conducted to see whether any significant gender-difference existed in overall use of self-regulation strategies and achievement. The same statistical tests just mentioned - i.e. simple correlation, multiple regression, and $t$-test - were performed again to check whether any statistical differences existed in the sample if we compare results across type of school.

Overall use of strategies was not correlated with GPA neither in Lebanese orientation schools nor in American orientation schools. In fact, correlation coefficients were found to be $r = .24$ and $r = -.01$ respectively, both at $p > .05$. Among strategies, no separate strategy was found to be significantly correlated
with GPA neither in Lebanese orientation schools nor in American orientation schools. Multiple regression showed that goal-setting had the highest weight among other strategies in predicting GPA in the Lebanese orientation schools; while no separate strategy showed to have any significant weight in predicting GPA in the American orientation schools too. t-test showed no significant gender-difference neither in the Lebanese orientation schools nor in the American orientation schools in overall use of self-regulation strategies. Finally, simple correlation showed no relation between self-regulation strategies use as reported by students themselves and as reported by those students' respective teachers. Results were discussed in terms of social cognitive interpretation of self-regulation. Recommendations for further research were also presented at the end.
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In the honor of my late father & mother, Emile & Frida...

To my beloved wife, Najwa, who endured with me so many long nights continually encouraging me to have this work completed...
CHAPTER 1
INTRODUCTION

Context of the Problem

Recent theoretical accounts of learning view learners not as mere passive recipients, but as active participants and processors of information (Bandura, 1986; Brophy, 1983; McCombs, 1984; Schunk, 1985; Winne, 1985). Accordingly, the issue of self-regulated learning has recently emerged as a topic of particular interest for cognitive, developmental, and educational psychologists (Corno & Mandinach, 1983; Zimmerman, 1986). In one of his statements, Schunk (1985) defines self-regulated learning as a "... process whereby students' cognitions manifest themselves in planful behaviors oriented toward learning." In other terms, it is the process in which students are able to activate and sustain their cognitions and behaviors in view of attaining academic learning goals (Schunk, 1991). Therefore, students should be active ingredients in the learning process: they should be interested in the learning task in order to have the will to pursue their commitment to those goals. By cognitions, Schunk meant a series of activities such as: Attending to instructions, processing and integrating information, thinking, rehearsing, and problem-solving. Those activities also include beliefs concerning
capabilities for learning and anticipated outcomes of learning (Schunk, 1985; Winne, 1985).

Similarly, Zimmerman (1986) maintained that:

Self-regulated learning theorists view students as metacognitively, motivationally, and behaviorally active participants in their own learning processes. Metacognitively, self-regulated learners are persons who plan, organize, self-instruct, self-monitor, and self-evaluate at various stages during the learning process. Motivationally, self-regulated learners perceive themselves as competent, self-efficacious, and autonomous. Behaviorally, self-regulated learners select, structure, and create environments that optimize learning. According to this view, effective learners become aware of functional relationships between their pattern of thought and action (often termed strategies) and social and environmental outcomes. (p. 308)

As a matter of fact, it is because of the presence of various subprocesses in self-regulated learning, that Corso and Mandinach (1983) described the main process as "... the highest form of cognitive development." Taken from a Social-Learning Theory perspective, much of everyday behavior consists of chains of reactions that have been built up
so that a response is cued by completion of the immediately preceding response. Many activities do not consist of discrete acts, a fact requiring continuous decisions among alternate responses based on the person's judgment of the adequacy of each of the discrete components. Whenever these smooth activities are interrupted or fail to produce the effects to which the person has become accustomed, the activity will stop and a self-regulation process will begin through several strategies (Kanfer, 1980). Over-and-above the presence of a growing body of evidence attesting the importance of self-regulation learning processes in addition to pioneering experimental researches conducted by theorists such as Bandura (1977), Kanfer (1971), Meichenbaum (1977), and Thorossen and Mahoney (1974), there is a growing body of research on the relationship between self-regulation learning processes and academic achievement (Bandura, 1986; Schunk, 1984; Zimmerman & Martinez-Pons, 1986). One example is the research conducted by Zimmerman and Martinez-Pons (1986) who found that the use of self-regulation learning strategies of high school students during classes was positively correlated with their academic achievement. In this research, the interest relies in assessing the relationship between a selected set of self-regulation strategies and academic achievement in Lebanese students. Since this subject has not yet been consistently approached by Lebanese researchers on Lebanese subjects, the results of this study will highlight the issues concerned with this relationship, providing a new frame of reference for the teachers as they become
more and more aware of the processes and subprocesses underlying such strategies in their students.

Social-Cognitive View of Self-Regulation

In order to study self-regulated learning, one should study the processes that students usually use to start and direct their efforts to acquire knowledge and skill. A triadic analysis of component processes and an assumption of reciprocal causality among personal, behavioral, and other environmental triadic influences are all involved in the social-cognitive view of self-regulated learning (Zimmerman, 1989). Psychological functioning is explained by Bandura (1977b) as a reciprocal determinism - a continuous reciprocal interaction of personal, behavioral, and environmental factors. In an attempt of solving a problem, a student's response is determined by perceived self-efficacy and also by other environmental stimuli such as teacher encouragement and by the student's outcomes. This very reciprocal formulation allows self-regulatory responses to influence the environment as well as various personal processes such as self-efficacy perceptions. Personal factors and behavior, as it is well known, are reciprocal determinants of each others. For instance, people's expectations influence how they behave, and the outcome of their behavior change their expectations; similarly, personal and environmental sources of influence
are interdependent. Within this approach, self-regulation processes as well as other processes assume a prominent role in learning. Those self-regulation processes in educational setting as with respect to academic achievement will be the focus of this present thesis.

**Purpose and Statement of the Problem**

No clear-cut agreement on the set of strategies involved in self-regulated learning is present. Goal-setting has been found by many researchers as being one of the most important strategies (Bandura & Schunk, 1981; Cervone et al., 1991; Locke et al., 1984; Locke et al., 1981, 1984; Schunk, 1983, 1984, 1985, 1991). Others proposed self-monitoring (Ames & Archer, 1988). Still, others stressed upon self-evaluation (Stock & Cervone, 1990). With this many differing points of view, it is really worthy to investigate the sets of self-regulation learning strategies that Lebanese students use. Moreover, there is no clear-cut research evidence on cultural differences in the students' use of self-regulation strategies. Since so far research evidence show that students with higher economic status ES use more self-regulation strategies than lower ES students, the present study intended to investigate strategy use in high ES students.

The purpose of this study was therefore to check whether any relationship exists between a certain set of self-regulation strategies and
academic achievement as measured by grade-point average GPA in a sample of private school elementary level students. Also, there was a concern to compare strategies used in order to know whether a certain strategy was a relatively better predictor of academic achievement. Moreover, gender-difference in strategy use was of concern and was also checked. Being nowadays the most supported by research conducted in developed societies, goal-setting was selected along with three other strategies as representative from the pool of strategies. Those three strategies were: self-consequation (Bandura, 1978; Kanfer, 1980; Zimmerman & Martinez-Pons, 1986, 1988, 1990), self-monitoring (Bandura, 1978; Kanfer, 1980; Schunk, 1983; Zimmerman & Martinez-Pons, 1986, 1988, 1990), and reviewing records (Zimmerman & Martinez-Pons, 1986, 1990). As those four strategies were relatively easier to measure in a concrete manner, this gave further support for their selectivity.

This study intended therefore to answer the following five research questions:

1a. Is there any significant correlation between overall self-regulation strategies scores and GPA?

1b. Is there any significant correlation between each of the four self-regulation strategies (goal-setting, self-consequating, self-monitoring, and reviewing records) and GPA?
2. Would any of the strategies yield more weight toward predicting academic achievement?

3. Would overall self-regulation strategies scores differ significantly across (a) gender and (b) type of school?

4. How does the relationship between self-regulation strategies (total and subtotal strategies scores) and academic achievement compare across type of school?

5. Would there be a significant correlation between students' self-regulation strategies scores as reported by students themselves and as reported by their respective teachers?

Need

The process of self-regulation should be of interest to all educators since it is perceived as an educational objective by itself. And since environmental, personal, and behavioral influences affect one another, students can be taught to become self-regulated learners through acquiring effective strategies and by enhancing their perceived self-efficacy. By using self-regulated learning, students become able to increase their personal control on their behavior and immediate environment. After all, educators' ultimate goal is to teach students to become metacognitively involved in learning - to think about their thinking and to learn about their learning. In this respect,
John W. Gardner said that "the ultimate goal of the educational system is to shift to the individual the burden of pursuing his own education" (Zimmerman & Schunk, Eds., 1989, p. vi).

In addition, the results of this study will add to the knowledge base on self-regulation strategies used by our high ES elementary students in Lebanon. It is worth mentioning that Bisat (1993) studied self-regulation strategy use in a sample of Lebanese high ES students and yielded inconsistent results. 140 fourth and fifth graders (77 boys and 63 girls) participated in her study by answering a self-regulation strategy use questionnaire. Results showed gender differences in the use of self-regulation strategies. However, no significant relation was found neither between overall self-regulation strategies scores and overall GPA, nor between any selected self-regulation strategy subtotal and GPA. Those results warranted further investigation, taking into considerations limitations and suggestions for further research proposed by Bisat (1993). Nevertheless, a new dimension was added in this study which Bisat did not mention: comparing the results of students coming from two different categories of schools: a category with a Lebanese orientation in its social context and another category with an American orientation.
Sample

A random sample from the fourth and fifth elementary students was selected from four schools, two schools representing the Lebanese orientation and the two others representing the American orientation. All four schools have high tuition fees. Those four schools share also the English language of instruction which they teach since the nursery level.

Instrument

The instrument used in this study was a 25-item questionnaire previously used in an unpublished M.A. project (Baat, 1993), copy of which is presented in Appendix 1. Students were given the questionnaire during regular class hours and had 25 minutes to finish it (i.e. at the rate of 1 min / question). At time of administering the questionnaire, the researcher was present along with the class respective teacher to secure uniformity of directions among students and to reduce experimenter bias that may be present to the minimum.

Data Analysis

All answers were numerically coded and analyzed by using the SPSS PC+ computer software. Test-retest reliability and internal consistency coefficients
of the questionnaire were obtained. Simple correlations, multiple regression analyses, and t-test were carried out to answer the research questions.

Assumptions

1. In an attempt to control sample mortality, all students were asked not to be absent the day of administering the questionnaire a few days ahead by their respective teachers with whom the implementation date will have been arranged.

2. Students responded honestly and seriously to all items of the questionnaire as they will be notified before hand of the importance of their input to this research.

Limitations

There are a number of factors limiting the generalization of the results. (a) Only private schools were included in the study. This has a limitation in itself since only students coming from high ES can join private schools. (b) Only schools with a Lebanese and American orientations were included in the study. Schools with other orientations (French, ...) were not included in this research. (c) Only four strategies among the pool of self-regulation strategies were included.
This research is therefore limited and its results cannot be generalized across setting. It can be generalized only to similar population under same conditions and/or restrictions. It therefore offers the possibility of taking these limitations in further researches, to expand them, and to have more exhaustive results on the use of such strategies - and other self-regulation strategies too - with students at different school levels in Lebanon.
CHAPTER 2

LITERATURE REVIEW

This chapter is divided into three main sections, each dealing with self-regulation strategies and academic achievement from a different angle.

Section one deals with a theoretical analysis of self-regulation strategies. Its aim is to give the reader a comprehensive overview of the intervening factors that affect/control self-regulation strategies and their impact on academic achievement from a theoretical background. This section is divided into four subsections - self-regulated learning strategies, stages of self-regulated learning, self-regulated learning and self-efficacy, and interaction between self-efficacy and goal-setting.

Section two is divided into five subsections: the first one deals with research done on the impact of self-regulated learning on achievement. As to the other subsections, each of them deals with the effects of a specific self-regulation strategy on academic achievement. Four strategies were selected: goal-setting, self-consequating, self-monitoring, and reviewing records.

Section three deals in three subsections with moderator variables that may affect correlations between strategies and academic achievement: the first part considers the differences in the use of self-regulation strategies that occur
between boys and girls; the second part considers the differences in the ES background of the students with respect to their use of self-regulation strategies; and the third part considers the differences in the use of self-regulation strategies for students coming from different cultures.

Theoretical Background

Self-Regulated Learning Strategies

Learners who are self-regulated represent their actions in terms of strategies to reach specific goals. Their motivation is sustained by their perceived self-efficacy. We can therefore say that self-regulated learning involves the use of specific strategies to achieve academic goals on the basis of self-efficacy perception. Three elements are involved: the student's self-regulated learning strategies, self-efficacy perception of performance skill, and commitment to academic goals (Zimmerman, 1989). Zimmerman (1989) defines self-regulated strategies as "actions and processes directed at acquiring information or skill that involve agency, purpose, and instrumentality perceptions by learners." (p. 329). Achievement is highly dependent on the use of these strategies which, in turn, improves the learner's motivation, academic achievement, and cognitive functioning. Zimmerman and Martinez-Pons (1986) identified fourteen strategies of self-regulated behaviors in addition to one non-self-regulation strategy which he labeled as
other. These fourteen strategies are: self-evaluation, organizing and transforming, goal-setting and planning, seeking information, keeping record and self-monitoring, environmental-structuring, self-consequating, rehearsing and memorizing, seeking social assistance, and reviewing records.

Self-evaluation is shown in statements whereby learners indicate their own evaluation of the quality and progress of their work. Organizing and transforming refer to statements indicating student-initiated overt or covert rearrangement of instructional materials to improve learning. Goal-setting and planning are statements showing learner setting educational goals or sub-goals and planning for sequencing, timing, and completing activities related to these goals. Seeking information is reflected in statements about learner's initiated efforts to secure further information about the task from nonsocial sources when undertaking an assignment. Keeping records and self-monitoring are explicit when shown in statements indicating learner's initiated efforts to record events or results. Environmental-structuring is reflected in statements indicating learner-initiated efforts to select or rearrange the physical setting to make learning easier. Self-consequating refer to statements about learner's arrangement or imagination of rewards in case of success or punishment in case of failure. Rehearsing and memorizing are explicit in statements indicating learner-initiated efforts to memorize material by overt or covert practice. Statements indicating learner-initiated efforts to solicit help from peers, teachers, or adults are indicative of seeking social assistance.
Reviewing records is when statements show learner-initiated efforts to re-read tests, notes, textbooks, etc., in order to prepare for class or for further testing. Finally, the single category that Zimmerman labeled as other reflects statements indicating learning behavior that is initiated by other persons such as teachers and parents, along with all unclear verbal responses. Students use these strategies to improve self-regulation of their personal functioning, academic behavioral performance, and learning environments. Strategies such as self-evaluating and transforming, goal-setting and planning, and rehearsing and memorizing, focus on optimizing personal regulation. Strategies such as self-evaluating and self-consequating are designed to enhance behavioral functioning. Finally, the other strategies - i.e. seeking information, record keeping and self-monitoring, environmental structuring, seeking social assistance, and reviewing academic material - are intended to optimize the students' immediate learning environment (Zimmerman & Martinez-Pons, 1990).

The use of self-evaluation strategy will provide information about accuracy and whether this strategy should continue through enactive feedback. Causation is here self-initiated, implemented through the use of strategies, and enactively regulated through perceptions of self-efficacy. Self-efficacy - in its turn - regulates strategic efforts to acquire knowledge and skill. However, learning strategies would not be labeled self-regulated unless they become under the influence of goal-setting and self-efficacy perceptions or if they are
initiated from the environment, such as instruction, for example. Researchers that are seeking to understand students' self-regulated learning must be sensitive to the impact of variations in context and personal experience.

**Stages of Self-Regulated Learning**

Self-regulated learning passes through three consecutive stages: self-observation, self-judgment, and self-reaction: first, the learner attends deliberately his/her own behavior depending upon a certain performance standard. Second, he/she starts the self-evaluative stage by comparing information obtained from self-monitoring and the criteria from the given behavior. In doing this, the obtained response reveals the discrepancy between what the learner is actually doing and what he ought to be doing. A low discrepancy is indicative of satisfaction of the learner with himself/herself; while a large discrepancy is indicative of a dissatisfaction. Third, the motivational stage entails: Self-reinforcement starts depending upon the degree to which the behavior diverges from the performance standard. Continuation of the interrupted initial behavior chain is a result of positive reinforcement: each time a new response is tried, the same sequence is repeated until the above-mentioned standard is approximated; else, the learner abandons the whole process. (Kanfer, 1980; Schunk, 1989; Zimmerman, 1989).
People tend to become alerted in case of unexpected behavior consequences or whenever a decision needs to be made about how to proceed. This same process also occurs in case of learning a new activity, finding oneself in a strange situation, or when an environmental reaction has changed. Overall behavior efficiency becomes reduced to the extent that the above-mentioned three psychological processes become carried out inefficiently.

Self-Regulated Learning and Self-Efficacy

Bandura (1982), Schunk (1984), and Zimmerman and Martinez-Pons (1999), among other social-cognitive theorists, consider self-efficacy to be a key variable that affects regulated learning. Schunk defines perceived self-efficacy as judgments to attain designated performances (Schunk, 1991, p. 121).

Students' self-efficacy perception is positively related to their self-monitoring and learning outcomes. Students with low sense of self-efficacy may be discouraged easily by failure, while as those with a high sense of self-efficacy are more apt to intensify their efforts whenever they fall short and persist until success (Bandura & Cervone, 1983). Research has moreover shown that students' perception of self-efficacy is positively related to other learning outcomes such as task choice, task persistence, skill acquisition, effective study skills, and academic achievement. Students' behavioral
performance is presumed to influence their perceptions of self-efficacy, which in turn, influence their behavioral performance.

Bandura and Schunk found that people acquire information about their self-efficacy from performance accomplishments, vicarious experience, social persuasion, and inferences from physiological states. It is those people’s performances that offer information for assessing self-efficacy. (Bandura, 1982; Schunk, 1985). Success raises self-efficacy whereas failure lowers it. Students in classrooms acquire much information about their capabilities through knowledge of how their peers perform. Observing succeeding peers provide students a vicarious sense of efficacy leading to an inner belief that they too can accomplish the task. Teachers can also have the role of persuading their students that they are capable of producing well. When they sweat or tremble, they may feel not very capable of learning. However, when they notice their reactions to be less agitated, they may experience a heightened sense of efficacy for mastering a given task.

Self-efficacy is also dependent on students' knowledge of how to use strategies and on the time and place when those strategies are effective. Self-efficacy is also dependent on metacognitive processes and goals, since metacognitive decision making depends on learner's long-term goals which should be specific, of intermediate difficulty, and proximal. Self-efficacy depends also on affect. Anxiety, for instance, can weaken students' use of metacognitive control processes and can inhibit setting long-term goals (Zimmerman, 1989).
Interaction Between Self-Efficacy and Goal-Setting

Goal-setting involves "establishing a standard or objective as the aim of one's actions" (Schunk, 1984, p. 30). Gaa (1973) found that students having priorly set goals attain higher level of performance than those who have not set those performance goals. Goals with specific performance standards lead to higher performance than those with no goals at all or with only general goals, such as Do your best (Gaa, 1973; Locke, Shaw, Saari, & Latham, 1981; Schunk, 1984). Moreover, having more difficult but still attainable goals result in higher level of performance. Also, proximal and close-at-hand goals - i.e. those that can be achieved quickly - result in greater motivation directed towards goal attainment and in higher performance, as compared to no presence of preset goals or the presence of long term and/or distant ones (Schunk, 1984).

From a social cognitive perspective, the motivational power of goal-setting does not only derive from the goals themselves, but from the influence of self-referent thinking processes or self-regulation ones. By working toward well defined goals, students are more apt to evaluate the relation between their standard of performance and their actual attainment (Cervone, Jiwani, & Wood, 1991).

Cognitively based motivation have centrally self-regulation processes such as self-evaluation of one's performance, judgments of self-efficacy, and personal goal-setting. People react in an evaluative manner after they perform
in a certain manner. If they are satisfied with what they reached, their satisfaction would be contingent on further progress. The reverse is true: when there exists a great discrepancy between the attained level and their standards, dissatisfaction entails; and negative evaluation that stems from their pre-expected high standards may lead them to depression (Cervone et al., 1991). Still, self-evaluation reactions serve an important motivational function because even when someone fails at attaining the preset goal, his/her dissatisfaction with the standards can urge him/her to greater efforts (Bandura & Cervone, 1983; Cervone et al., 1991).

Another motivational process comprises judgments of self-efficacy, whereby people with greater confidence in their performance capabilities display greater efforts and persistence in facing challenges and difficulties (Bandura, 1989b; Schunk, 1984; Cervone & Peake, 1986). Sustained performance towards a certain goal requires a stronger sense of one being actually able to attain this goal. Such perception of efficacy are crucial in performance motivation. Moreover, self-efficacy judgments can influence behavior directly and through their effect on self-set goals to attain. While performing an activity, people may redefine or reinterpret their aims, raise or lower their performance goals. At that point, they would become committed to that just-adjusted standard, and this may as well influence subsequent efforts. Also, people with stronger sense of self-efficacy tend to
set higher goals for themselves and are more apt to remain committed to achieve those goals (Cervone et al., 1991).

Goal-setting has also the property of moderating relations between self-efficacy and performance. Whenever they receive feedback on their progress toward a well-defined goal, people use this information to assess their capabilities of reaching the goal, a function that helps in regulating subsequent efforts. In contrast, not having a goal or at least a minimal standard against which people would compare their attainments would make those people's self-efficacy / inefficacy judgments unreliable. In addition, not having a goal would lower motivation and efforts since incentive for better performing has ceased to exist. It is worthy here to mention that past performance may not strongly affect self-efficacy in future performance whenever the effort to reach that previous goal had been low. Inferior outcomes that were achieved with minimal efforts may not always indicate lack of capabilities.

Effects of Self-Regulation Strategies on Academic Achievement

Self-Regulated Learning and Academic Achievement

Zimmerman and Martinez-Pons (1986, 1990) found while determining the relationship between students' use of self-regulated learning strategies and achievement in school, that high achievement students showed more use of all self-regulated learning strategies as compared to low achieving
students, except for self-evaluation and other responses. As a matter of fact, they found that 93% of the students could be correctly classified into an appropriate achievement track group by knowing their self-regulation strategies. Taken from that perspective, those strategies are predictors of academic achievement (Pintrich & De Groot, 1990; Zimmerman, 1999; Zimmerman & Martinez-Pons, 1986, 1988). Moreover, regression analyses in the studies of Cervone et al. (1991) showed that the interaction of self-evaluative reactions and perceived self-efficacy contributed significantly to performance.


Self-efficacy perceptions do affect performance and illustrate the way efficacy judgments influence attainments; and this happens by revealing links from perceived self-efficacy to motivation, thinking and decision processes, emotional states, and physiological arousal (Bandura & Cervone, 1983; Cervone & Peake, 1986; Cervone et al., 1991). Indeed, human achievement depends heavily on the use of self-regulated learning strategies. Teaching students about self-regulation strategies is important for
improving academic performance; and improving students' self-efficacy beliefs leads to more use of those cognitive strategies (Pintrich & De Groot, 1990).

It is important here that students themselves have a role to play. They are active ingredients in the process of learning. Indeed, students who believe they are capable, are more likely to use cognitive strategies and to persist more often at difficult or uninteresting academic tasks. "Students need to have both the will and the skill to be successful in classrooms" (Pintrich & De Groot, 1990, p. 38). Truly, students' intrinsic value and motivation to learn is an important component in the issue of the way these students come to use different cognitive strategies and become self-regulated learners.

Goal-Setting and Academic Achievement

Locke et al. (1981) defined a goal as "what an individual is trying to accomplish; it is the object or aim of an action" (p.126). This goal reflects the person's purpose. Individuals can either set their goals or have them set or established by others such as parents, teachers, or significant others. Most of the research done on goal-setting assumes that goals are indeed immediate regulators of human actions. They not only initiate any direct behavior, but the content of the goal itself helps in setting the strategy to achieve it (Rosswork, 1977).

Goals can also set stages for self-reward. When individuals attain their goals, they have specific feedbacks, such as positive self-statements - or
may feel satisfied; and this may even lead them to reward themselves tangibly. Self-rewards may also have the power of maintaining behavior even in the absence of external rewards. Over-and-above, even when people become dissatisfied upon a failure in attaining self-set goals, they will still persist towards the attainment of those goals if they still judge them as attainable. In this sense, goals have created constructive dissatisfaction (Ahrens, 1987; Bandura, 1977b, 1982, 1989a; Locke et al., 1981; Schunk, 1985, 1989).

Goals have their specificities - the degree of precision with which the goals were specified; their difficulties - the level of task proficiency measured against a certain standard (Locke et al., 1981); and their proximities - by how far they project into the future (Bandura, 1977b; Schunk, 1985). Rosswork (1977) conducted an experiment to determine the relationship between difficulty level and task performance. The sample consisted of eighty sixth-grade students equally divided between the two sexes. They were given a list of words taken from a fifth-grade-level spelling book which they were required to use each of those words in a written sentence. Another equivalent list was used for each of the three 5-minute trials. An experimental task was given as a pretest to all subjects during their regular classroom periods. The eighty subjects were ranked in order according to the highest scores on the pretest. The eight students with the highest scores were then randomly assigned to groups, followed by the next block of eight students having the next highest scores, and so on until all students were assigned to
groups. This ended up with eight 10-subjects treatment groups. Each five
subjects within each group constituted the high ability subgroup, the second
five were the low ability subgroup. Each subject received three trials:
baseline, acquisition, and withdrawal of reinforcement. Four groups were
given an assigned difficult goal; another four groups were not given a specific
goal—just a Do-your-best instruction. The task was presented in a routine
manner; instructions were used and subjects were given one practice trial first.
The apparatus consisted of a blank paper and a pencil given to each student on
which they had to write their sentences. After each trial, the experimenter
counted the total number of sentences disregarding the quality, and wrote that
number on the page. Unfinished sentences of three or more words were
counted as complete only on condition that they were the last sentence.
Results indeed showed a positive linear relationship: They confirmed the
hypothesis that giving specific difficult goals improved and maintained
performance more than non-specific goals. Similarly, Latham et al., (1978)
studied the same effect of goal-setting but with older subjects. As a matter of
fact, 90% of the laboratory and field studies effected between 1969 and 1980
showed a positive linear relationship between difficulty level and task
performance (Locke et al. 1981). Moreover, Schunk (1984) studied the
relationship between goals and academic skill development. Thirty three
students with deficiency in division skills were taken from two elementary
schools. They received instructions in division problem. Results were
similar to those observed by Rosswork in 1977 (Schunk, 1984). In 1985, Schunk studied through an experimental research on the role of self-efficacy during classroom learning on cognitive skills in elementary middle class students. Results showed effectively that specific goals raised self-efficacy more than general goals since progress towards a specific goal was much easier to evaluate.

Although students may initially doubt their capabilities to attain goals they perceive as difficult, such goals can bring a strong sense of efficacy if worked towards them; especially that the more difficult the goals are, the more information they offer about one's capabilities to acquire knowledge and skills (Schunk, 1985). As to proximal goals - i.e. close at hand, research outcome shows that they produce greater motivation, are achieved more rapidly, and are directed toward attainment and higher performance much more than no goals at all or goals set in the future (Ahren, 1987; Bandura, 1977b, 1982; Bandura & Schunk, 1981; Schunk, 1984, 1991; Stocke & Cervonne, 1990). Moreover, researchers posit that pursuing proximal goals convey more reliable information about one's knowledge and skills. Indeed, as students observe their progress toward a proximal goal, their sense of learning self-efficacy becomes enhanced (Bandura & Schunk, 1981; Gaa, 1973; Schunk, 1984, 1985). The experiment conducted by Bandura and Schunk (1981) examined the effect of proximal goals on competencies, perceived self-efficacy, and intrinsic interest. Forty students, 21 males and 19 females,
were grouped from six elementary schools. Those students, aging between seven and ten years, displayed low interest in arithmetic skills which directly reflected on their achievement. They were randomly assigned to three groups according to the treatment conditions - proximal goals, distal goals, no goals, and an additional group being the control one. In the first treatment - proximal goals, the experimenter suggested that they may consider themselves to set a goal to complete each session at least six pages of instructional items regarding subtraction skills. In the distal-goal group, the experimenter suggested that they set a goal of completing the forty-two pages - 258 problems - of instructional items by the end of the seventh session. The third group were only to do the problems through self-directed learning without receiving any reference to goals. They were only asked to complete as many pages of items as possible. The control group was given the problems any intervening exposure to the instructional material. Results showed that proximal goal-setting cultivates competence, perceived self-efficacy, and intrinsic interest. Competence, in that they progressed rapidly towards self-set goals; perceived self-efficacy, in that they achieved more rapidly the mastery of mathematics operation; and interest, in that they elevated their interest in activities that were initially of little attraction to them. Another issue of interest arises here - the way goal-setting affects task performance. This involves the motivational mechanism. Goals affect task performance by at least four mechanisms (Locke et al., 1981): First, goals direct attention and
Second, they mobilize effort since harder accepted tasks need more effort than easier tasks. Third, goals motivate strategy planning, especially in complex tasks. Fourth, knowledge of the result or feedback are also incentives to better performance (Bandura, 1978; Locke, 1967; Locke et al., 1981; Schunk, 1989). A limit to the above-mentioned mechanisms exists. Earley et al. (1989) hypothesized that there exist boundaries beyond which goal-setting will not work, they may even be more harmful to the individual. In some complex or even discovery learning tasks, for example, goal-setting may be dysfunctional as it may be limiting to the individual and may misdirect his or her attention. Also, goals may be dysfunctional to individuals under pressure or stress. Therefore, the authors concluded that goal-setting is not advised where tasks and/or setting are characterized by novelty and strategic multiplicity.

Self-Consequating and Academic Achievement

High achievers do reward or punish themselves. This is the reason behind the importance of self-consequating as a strategy in self-regulation. Zimmerman and Martinez-Pons (1986) used this term of self-consequences or self-consequating to represent both imagined and actually arranged outcomes. They found in their study that reinforcing consequences on their own or by comparing their results to an observed model's past behavior is motivating to them. Their study consisted in fact of middle class sophomores, half of them from an advanced achievement track and the other half from a lower
achievement track. The students were interviewed on the fourteen categories of self-regulation in scope of seeing which students identified with which techniques. They were then interviewed on their use during class, homework, and study. High achieving students were found to be using many of those fourteen categories significantly more than the lower track students. Reinforcement played an obvious role. As earlier external reinforcement leads us to develop self-reinforcement, we become motivated from within. If the activities we do are of intrinsic value to us, we tend to have somewhat self-appraisal. We hold ourselves accountable by self-reinforcing or self-punishing ourselves. This type of self-consequating affects our performance. Therefore, by means of our cognitive activity and the management of our own environment, we are able to motivate ourselves through this self-generated reward/punishment. By this means, we are able to regulate our own behavior (Gage & Berliner, 1988).

The hypothesis that self-efficacy mechanisms mediate goal-setting or performance was tested by Bandura and Cervone (1983). 90 students from a freshman psychology course (equally divided between gender) were tested to determine whether recording one's self-satisfaction and self-percepts of efficacy had in itself any reaction effects on performance. Results confirmed that by observing our own performance, we examine our own behavior, and this by evaluating the outcomes against our personal standards. Following this, we determine the consequences to ourselves;
and the basis of the judgments of our behavior generates self-satisfaction or dissatisfaction. Hence, we use this reward or punishment to control our performance.

Another experiment was conducted by Schunk (1984) to compare the effects of performance-contingent rewards and proximal goals on children task motivation, self-efficacy, and skillful performance. 33 children - 20 girls and 13 boys - deficient in division skills constituted the sample of the study. They were randomly assigned to three groups: rewards-only, goals-only, and rewards-plus-goals. All groups received over two consecutive school days, two similar 45-minute training sessions in division - the first with one-digit divisors, the second with two-digit divisors. The rewards-only group was informed by their proctor that they would earn five points for each completed problem because they agreed to participate in the study; and that they could exchange their earned points at the end of the second session against prizes matching the monetary value of the points. The children were shown those prizes. The goals-only group was instructed by their proctor at the beginning of the first session to finish at least twenty problems. Then, the proctor asked them whether this quantity seemed reasonable. At the beginning of the second session, the proctor repeated the goal but this time with only ten problems to finish; and then asked them whether this seemed reasonable. As to the last group, they received both treatments prior to each training session. Results confirmed the researchers' hypothesis that through the measurement of
the children's division performance, rewards plus proximal goals led to higher efficacy than either treatment separately. Bandura (1978) concluded on the basis of many experiments:

A large body of evidence exists showing that people who reward their own behaviors achieve significantly higher levels of performance than those who perform the same activities under instruction but receive no reinforcement, are rewarded non-contingently, or monitor their own behavior and set goals for themselves but do not reward their attainments. (p. 351)

Self-Monitoring and Academic Achievement

Self-monitoring - a "deliberate attention to some aspect of one's behavior [which] is often accompanied by recording its frequency or intensity" (Schunk, 1983, p. 89) - is another initial component of self-regulation. The first step in regulating one's behavior is to observe the responses of interest. Self-observation leads to self-evaluation and self-determined reinforcement. Also, self-monitoring of instructional progress is expected to boost achievement. Schunk (1983) provided subtraction instruction and practice to 30 mostly middle-class eight-to-nine year old children in order to investigate the effects of self-monitoring on achievement and percepts of self-efficacy in mathematical competency development. The sample was devided
into three groups - the self-monitoring group was to review its work at the end of each instructional session and to record the number of pages of completed tasks, the external monitoring group was to review its work at the end of each session by an adult who recorded the number of pages of completed tasks, and the control group was to receive the similar instructional session, however, without being told to monitor itself or being monitored. The recording of number of pages of completed tasks for the first two groups was done on a separate sheet. Results showed that the first two groups had significantly higher self-efficacy skills and persistence as compared to the control group. Self-monitoring also increased time on task and promoted achievement. It furthermore allowed students to gain information about their own capabilities. This should foster a more general sense of responsibility for mastering cognitive learning - an important developmental task appearing mainly in school.

Taken from a developmental perspective, recording progress may be of importance for young children who tend to either have short time frames of reference and/or may not be conscious of what they have achieved. Keeping prior progress information in mind is positively contingent with children development (Schunk, 1983). Also, anticipated satisfaction of attaining a goal leads to sustained involvement until performance matches standards. A field experiment was conducted by Sagotsky et al. (1978) in order to investigate the effects of training in self-monitoring and goal-setting.
skills on classroom study behavior and academic achievement. To do so, 67 fifth and sixth graders - 37 girls and 30 boys - coming from a suburban elementary school received an individualized mathematics instruction program. Half of the sample received self-monitoring techniques through learning a simple system for observing and maintaining daily records of their own behavior during mathematics classes; while as the other half - the control group - did not receive this technique. Exposure to self-monitoring procedures proved to increase significantly both appropriate study behavior - as measured by students' use of the self-regulated learning strategies mentioned hereabove - as well as actual achievement in the mathematics program.

Reviewing Records and Academic Achievement

Reviewing records occurs when students read tests, class notes, or text material, in order to prepare for class or for further testing (Zimmerman and Pons, 1986). Both authors tested this hypothesis in 1990 through selecting randomly from special schools for the academically gifted a sample of 90 pupils divided equally among sexes, and who were in the fifth, eighth, and eleventh grades. They selected also another 90 pupils in similar grades but from regular schools. All students were asked to describe their use of fourteen self-regulation strategies: self-evaluating; organizing and transforming; goal-setting and planning; seeking information; keeping records and monitoring;
environmental structuring; self-consequating; rehearsing and memorizing; seeking peer, teacher, or other adult assistance; and reviewing tests, notes, and texts. Another category of non-self-regulated learning responses—labeled as *other*—was also included for control purposes. Students were asked by a trained female graduate student to indicate which method they would usually use in eight different learning settings which were thoroughly described to them: classroom situation, completing written assignment, completing mathematical assignment, checking science or English homework, preparing for a test, taking a test, state of being poorly motivated to complete homework, and when studying at home. If the student gave an answer, he was asked whether he/she used any additional method. If he failed to answer, the student was given a probe. If the student still did not answer, questions regarding that specific learning context were discontinued. It was found that the two groups differed specifically in reviewing tests, class notes, and other text materials: indeed, high-achieving students surpassed by far low-achieving students in their use of this self-regulation strategy.

On another hand, the findings of the comparative study of King, A. (1992) regarding self-regulation strategies and their impact on achievement contradict the ones of the above-mentioned study. 56 college students in a remedial reading and study skill course listened to a lecture, took notes, and then engaged in their respective learning strategies. 19 subjects previously trained in questioning generated and answered their own questions based on
the lecture; another 19 subjects previously trained in summarizing wrote original summaries of the lecture, and the last 18 subjects in an untrained control group reviewed their own lecture notes. At immediate testing, summarizing group recalled more of the lecture than did self-questioning group, who in turn outperformed note-taking-reviewing group. On a retention test of lecture content done one week later, the self-questioning group performed significantly better than both the other two groups: a correlation of .63 with scores on retest for that group, .46 for the summarizing group, and .13 for the note-taking-reviewing group; all of these figures are taken at p < .01. Also, self-questioners' and summarizers' lecture notes contained more ideas from the lecture than did those of note-taking-review students.

Relationship of Gender, ES, & Culture-Difference in Strategy Use

Self-Regulation Strategies and Gender

Cognitive processing differ between genders at various age levels. Girls at some levels do use processes to solve cognitive tasks more efficiently than boys of the same age and/or level (Bards, Naglieri, and Prewett, 1992). Although there might be a controversy as to whether students may or may not make use of self-regulation strategies as the ones mentioned hereunder, research has so far shown that there always existed some gender difference
in the use of those strategies, few of them in favor of boys and the others in favor of girls.

As a matter of fact, a study including two experiments was run by those authors regarding the issue of gender differences with respect to planning, attention, simultaneous and successive processing tasks. The first one consisted of testing those strategies simultaneously through matching numbers, figure recognition, and word recall. 434 children from the second, sixth, and tenth grade constituted the sample. The second experiment added to the above strategies attention tasks for more comparison. 110 fourth and fifth graders were included in that study. All subjects in both experiments came from several schools in a large midwestern suburban school district. Results showed that in planning processes, girls, on the whole, succeeded far more than boys, and that the difference was significant for the sixth graders in the first experiment and for the fourth and fifth graders who constituted the sample of the second experiment. In the study of Zimmerman and Pons (1986) regarding the fourteen self-regulation strategies discussed earlier (see under section Self-Regulated Learning Strategies provided in Chapter 2), results showed gender differences too. Girls reported more record keeping, and monitoring, goal-setting and planning, and environmental structuring than boys did. Although not significant, difference existed in the other tested strategies. Girls surpassed boys in all of those strategies except in the category labeled as other.
However, other researches yielded inconsistent and controversial results. For example, in the study of Orosan, P.G.; Weine, A.M.; Jason, L.A.; & Johnson, J.H. (1992), 497 third to fifth graders were tested for gender differences in self-concept, self-regulation strategies, academic performance, teacher evaluation, and peer rating. Findings showed that females reported lower self-concept and self-regulation strategies than did boys; and that teachers' evaluations coincided with this perception. Another study (Miller, R.B.; Behren, J.T.; & Greene, B.A.; 1993) yielded similar results too. 117 students in an introductory statistics class were examined on their goal orientation, motivational patterns and self-regulation activities. More goal-oriented behavior and a larger number of strategies used were consistently present in boys' self-rating questionnaire and at a higher level than girls. Yet another research showed that males' achievement scores were higher than those of females especially when their self-efficacy is perceived high (Koizumi, 1992).

Self-Regulation Strategies and Economic Status

Recently, there have been several emerging researches concerning both the relation between pupils' self-regulated strategies and economic status ES and this relation's impact on the academic achievement of these pupils.

In one research, Farkas, G.; Grobe, R.P.; Sheehan, D.; & Shuan, Y. (1990) examined 486 seventh and eighth grade students enrolled in 22 middle
schools who constituted the sample under study. They were interested in the informal academic standards by which teachers rewarded more general skills, studying habits, and style. Among other characteristics, they took into consideration students and teachers' background characteristics, students' basic skills and teachers' perception of their students' work habits, and course grades - as measured by GPA. Results showed that achievement was positively correlated with gender, ethnicity, and ES. White males with a rich ES background achieved consistently higher than all other groups. Moreover, their teachers perceived that subgroup to be using consistently more learning strategies than the other groups.

Another research yielded similar results. Panda, B.N. (1992) compared 100 advantaged - 50 males and 50 females - students with another 100-student group of disadvantaged students - also equally divided among gender - in order to study their study habits. The sample was taken from the ninth and tenth grades. The two groups were randomly matched with age, sex, area of living, and ES. A study habits inventory and academic achievement tests were used for data collection. Results showed that non-disadvantaged students had better study habits as compared with disadvantaged students; high achieving students had better study habits than low achieving students; and boys had significantly better study habits than girls.
Self-Regulation Strategies and Cross-Cultural Differences

Regarding the use of self-regulated strategies and its impact on academic achievement too, there have been several recent studies concerning this issue, taking into consideration the possibility that the differences in using such strategies may be correlated with the different cultures from which the pupils come. From a theoretical / ecological perspective, Steinberg, L.; Dornbusch, S.; and Brown, B. (1992), gathered data collected from a large sample of high school students (4000 students representing 50 schools) in order to challenge three widely held explanations for the superior school performance of Asian-American adolescents and the inferior performance of African- and Hispanic-American adolescents as result of (a) parenting practices, (b) familial values about education, and (c) youngsters' beliefs about the occupational rewards of academic success. Students had to fill an objectively constructed questionnaire of 60 multiple-choice-item questions which reflected on the three points mentioned hereabove. Results showed that White youngsters benefited from authoritative parenting combined with peer support for achievement; Hispanic youngsters suffered academically as a result of low parental authoritarianism combined with low peer support; Asian-Americans youngsters had greater peer support that offset the negative consequences of authoritarian parenting; and finally, African-American youngsters did not receive much peer support for achievement but had a positive influence of authoritative parenting.
On another hand, Mccargar's research in 1993 provides us with a good example of cross-cultural differences in students' use of learning strategies and their implications on achievement. 41 teachers of English as a second language were involved in that study. As to the 161 subjects, they represent ten different cultures including Far-Easterns, Middle-Easterns, European, Colored, and Americans. Only the Japanese students preferred a teacher-oriented environment more than did their teachers. All the other subjects consistently preferred student-oriented environment. Results also showed that the subjects who used more learning strategies - as evaluated by their respective teachers - had consistently higher academic achievement - GPA being taken as the measure in point. As to the difference among cultures in using learning strategies, both Americans and European used in general more strategies - 82% - than their Far-Eastern, Middle-Eastern, and Colored peers - 79%; but the difference was minimal and was therefore not generalized (Mccargar, 1993).

In another correlational study, Shultz, G. (1993) examined relationships between socio-economic advantage SECA, achievement motivation ACM, and academic performance in a minority group: 130 African-American and Hispanic fourth to sixth graders. Level of SECA - high/low - was determined by school records and eligibility for participation in a compensatory school-lunch program for low-income children. A self-report measure of student's self-efficacy, intrinsic value, and self-regulated
learning strategies was used to determine the level of ACM (high/low). Performance data in reading and mathematics were obtained from results on an individually administered achievement test as a measure of academic achievement. Multivariate analyses revealed that for minority children—the sample under study being consisted only of children under this category—SECA and ACM were significantly mediators of academic performance, independent of intellectual ability. In fact, a correlation of .68 (p < .05) was found between SECA and ACM in one side and academic achievement in the other. No comparison with other groups of children—whether minority or any other—was mentioned since that specific information is beyond the scope of the research in question which study involves only a sample of minority children as described hereabove.

**Summary**

Studies discussed in this literature review chapter clearly speak of the important positive effect that the four hereabove selected self-regulation strategies (goal-setting, self-consequating, self-monitoring, and reviewing records) have on learning. Indeed, using one or more of these strategies proved to be correlated with higher academic achievement. Moreover, although researches yielded inconsistent results, gender differences in using
one or more of the different self-regulated learning strategies was present: few studies showed that boys who achieved academically higher were those who used strategies more in their study habits; other studies were in favor of girls with respect to this issue. On another level, ES of pupils was found to be correlated with academic achievement: Students with rich ES background achieved consistently higher than all other groups. In general, non-disadvantaged students had better study habits as compared with disadvantaged students. Finally, cross-cultural differences in using such strategies was also checked and found to be existing. Studies under this categories were effected mainly in the U.S. and showed that minority-groups' children, since they were more towards being disadvantaged as compared to other groups, used less self-regulation strategies and achieved less than their peers coming from other cultures.

These wealth of researches' findings, although few studies yielded inconsistent results, provided the incentive to proceed with this research, bearing in mind the scope of seeing the relation between study-habits of Lebanese school students and their respective academic achievement.
CHAPTER 3

METHODOLOGY

Research Questions

This study intends therefore to answer the following five research questions:

1a. Is there any significant correlation between overall self-regulation strategies scores and GPA?

1b. Is there any significant correlation between each of the four self-regulation strategies (goal-setting, self-consequating, self-monitoring, and reviewing records) and GPA?

2. Would any of the strategies yield more weight toward predicting academic achievement?

3. Would overall self-regulation strategies scores differ significantly across (a) gender and (b) type of school?

4. How does the relationship between self-regulation strategies (total and subtotal strategies scores) and academic achievement compare across type of school?
5. Would there be a significant correlation between students’ self-regulation strategies scores as reported by students themselves and as reported by their respective teachers?

Population and Sample

The population of this study consisted of the elementary students of two categories of high-tuition private schools - one following a Lebanese orientation, and the other one following an American orientation. Those class levels were chosen because it is at this stage that students start to form their self-regulation strategies - as shown by previous research results (e.g. Bisat, 1993). Regarding the type of schools, private high tuition-fees schools were chosen because it is assumed that in Lebanon, only students coming from high ES are able to get enrolled in such schools. As to the categories of school, schools in this country fall mainly under one or more of the main three following orientation(s) in their social context: Lebanese, French, and American. In this study, we were concerned with schools with the Lebanese orientation and/or the American orientations only.

315 fourth and fifth graders between 8.5 and 9.5 years old were included in this study. This sample was constituted of 180 boys (57.15% of the whole sample) and 135 girls (42.85% of the whole samples). The decision to include those grade level students was made for the following reasons. First,
and according to the literature, children do not start using self-regulation strategies before they reach the upper elementary grade levels, namely fourth and fifth grades (Mischel & Mischel, 1983; Schunk & Rice, 1984; Zimmerman, 1989). A student's personal capacity to self-regulate is assumed to depend on learning and development. Older and more experienced students are believed to be better able to self-regulate during learning (Zimmerman, 1989). Second, the pilot study that was performed by Bisat (1993) and which included second-, third-, fourth-, and fifth-graders, showed that the second- and third-graders did not understand the items of the questionnaires. Last, since it is assumed that self-regulation increases with age, children older than eleven or twelve are expected to be more self-regulated than younger ones; this gave further incentive to choose those two grade-levels specifically.

Design

The variables under investigation were four different self-regulation strategies, namely, goal-setting, self-consequaturing, self-monitoring, and reviewing records. The goal was to see their relation with academic achievement according to gender and to the category of schools the subjects pertain.
Definition of Variables

Goal-setting.

Goal-setting as a selected self-regulation strategy was represented in the questionnaire by the following questions which define behaviorally this strategy:

- Do you divide your assignments and try to do the easiest first and then the more difficult?
- Even when the teacher does not tell you to practice exercises, do you do these exercises on your own?
- Before doing the exercise of a particular chapter, do you read the chapter first and then do the exercise?
- Even when the teacher does not tell you to answer end-of-chapter review questions, do you answer these review questions?
- Do you have specific ways to prepare for an announced test?
- When you are preparing for a test, do you tell yourself that I would like to get a specific grade?
- Do you work hard to get a good grade even when you don’t like the subject?

Self-consequating.

Self-consequating as a selected self-regulation strategy was represented in the questionnaire by the following questions which define behaviorally this strategy:
- Do you play or watch television before you do your homework assignments?

- Do you tell yourself nice things when you do well on a test?

- Do you stop watching television or playing with your friends when you have not completed your homework?

- Do you stop going to the movies, watching television, or playing with your friends when you get a low grade?

- Do you tell yourself nice things when you complete your homework?

**Self-monitoring.**

Self-monitoring as a selected self-regulation strategy was represented in the questionnaire by the following questions which define behaviorally this strategy:

- Do you ask yourself questions to make sure you know the material you have been studying?

- When you are reading, do you stop every once in a while and review what you have read?

- After you read materials for class assignments, do you close the book and then ask yourself questions about what you have just read?
- While studying for a test, do you write down the points you did not understand so that you'll ask about them?

- If you were not told by your teacher what was wrong in your test or assignment, would you try to find out what was wrong either by yourself or by asking someone else?

- While the teacher is explaining, do you write down the points you did not understand so that you'll ask about them?

**Reviewing records**

Reviewing-record as a selected self-regulation strategy in the questionnaire was represented by the following items which define behaviorally this strategy:

- When you get your tests back, do you read them again and try to learn from your mistakes?

- While you are doing your homework assignments, do you write down the points you did not understand so that you'll ask about them?

- In the middle of the year, the teacher wants to give you a test on everything that you have done so far. In studying for this test, do you go back to your old homework?

- Do you write down every important point of a lesson (write a summary) while you study?
- Do you study from your class notes when you prepare for a test?
- Do you study from your class notes and your textbooks when you prepare for a test?
- Do you study from your textbooks when you prepare for a test?

Academic achievement.

It is determined by the cumulative average of English, Social Studies, Mathematics, and science grades received in the first trimester of the academic year 1994-95. All grades were reported or transformed from the original grading system adopted by the school in question over 100. All grades that were not reported originally over 100 were transformed into this system through using the following grading scale:

<table>
<thead>
<tr>
<th>Grade</th>
<th>Description</th>
<th>Equivalent</th>
</tr>
</thead>
<tbody>
<tr>
<td>A+</td>
<td>Excellent</td>
<td>96 to 100 / 100</td>
</tr>
<tr>
<td>A</td>
<td></td>
<td>90 to 95 / 100</td>
</tr>
<tr>
<td>B</td>
<td></td>
<td>80 to 89 / 100</td>
</tr>
<tr>
<td>C</td>
<td></td>
<td>70 to 79 / 100</td>
</tr>
<tr>
<td>D</td>
<td></td>
<td>60 to 69 / 100</td>
</tr>
<tr>
<td>E</td>
<td></td>
<td>Below 59 / 100</td>
</tr>
</tbody>
</table>

As to academic achievement, a high achiever is the one having a cumulative average of 85 / 100 or more. An average achiever is the one having a cumulative average between 70 / 100 and 85 / 100. A low achiever having a cumulative average below 70 / 100.
Sex.
Male, Female.

School orientation.
Lebanese, American

The Instrument

The instrument in this study was the 25-items questionnaire that was previously used in an unpublished MA project (Bisat, 1993), a copy of which is in Appendix 1. In order to construct the original questionnaire so that to assess students' self-regulation strategy use, Bisat selected and adapted items reflecting the four selected self-regulation strategies - goal-setting, self-consequence, self-monitoring and reviewing records - from questionnaires used by Pintrich and De Groot (1990) and Zimmerman and Martinez-Pons (1986). Those items are the ones mentioned hereabove in the definition-of-variables section of this chapter.

They were then randomly numbered from 1 to 25 and put in the questionnaire (Appendix 1). The items were hence devided as follows: Questions number 3, 9, 14, 15, 18, 21, and 24 assess students' goal-setting; number 4, 5, 17, 20, and 22 deal with students' self-consequating; number 6, 8, 10, 11, 19, and 23 are concerned with students' self-monitoring; and finally, number 1, 2, 7, 12, 13, 22 and 25 are concerned with students' keeping /
reviewing records. It is noteworthy to mention that questions regarding self-consequating were solicited from the students themselves during the original pilot study that was done by Bisat (1993). Answers to questions could be chosen among the following four alternatives: 1 = never, 2 = sometimes, 3 = most of the time, and 4 = always.

The language of the questionnaire is English because the above-mentioned schools teach English as the main language of instruction since nursery. In its first format, the questionnaire was piloted on a small sample of eighteen students randomly selected from the second, third, fourth, and fifth grades of one of the local American orientation schools in order to ensure that the researcher as well as the students understood each individual statement - a method to enhance instrument validity. Ambiguous words were omitted from the final version of the questionnaire. Content validity was checked by Bisat by requesting three teachers to read the questionnaire in order to predict what those questions measure and to classify them under common themes. All three of them agreed that the questionnaire measures study skills as well as habits, and the chief headings of the questions fit under the following categories - preparation for study from records, self-reward, self-punishment, study organization, and study planning. Last but not least, test-retest reliability coefficient of the questionnaire was found to be .75 after a ten-day interval (n = 20) (Bisat, 1993). Students had to fill the forms during class periods under the researcher's supervision. Respondents' names were not to be
mentioned on the forms; first because they are beyond the scope of the research, and second, in order to ensure anonymity of the respondents. Teachers were asked not to be present in time of administrating the forms. All copies were coded according to the school's student alphabetical list or other coding student adopted by the school itself. All subjects were notified that there will not be any evaluation of results - there is no right or wrong answers - and that the researcher was merely interested in their studying habits.

Reliability.

Bisat's questionnaire was therefore used for the objectives of this research. Reliability was assessed in this research through test-retest by giving the same questionnaire 20 to 30 days later to a random sample of 85 students among those who responded the first time. This procedure yielded a test-retest reliability coefficient of .83 at p < .01.

Moreover, the same questionnaire was given to six teachers among those who teach the classes from which the sample was drawn. Those teachers were asked to answer the same questionnaire on behalf of 20 students chosen at random from the sample of the students that previously filled the questionnaire. Those teachers were asked to rate those students' use of self-regulation strategies according to their perception. This process was essential since it helped in extending the assessment for reliability of students' perception of their self-regulation strategy use.
Procedure

Contact with the director of the elementary school of each of the four schools was established through a formal letter addressed to them, copy of which is in Appendix 2. All four directors were ready to help the tester; and the teachers of the selected classes were cooperative too.

The researcher was present along with their teacher in the classes to secure uniformity of directions among students and to reduce experimenter bias that may be present to the minimum. The researcher explained to them that what they had in their hands is not a test; it is merely a set of 25 questions so he learns more about their study habits. The researcher read to them question 1 and 25 of the questionnaire so they get desensitized to the type of questions they were about to face. It was made clear that there is no reason to compete between themselves since there will be no evaluation of their answers: There is no right or wrong answers to the questions. Although students were given the questionnaire during regular class hours (application of the questionnaire took place in the English class) and had 25 minutes to finish answering it (i.e. at the rate of 1 min/question), however, average time to finish all questions did not exceed 15 minutes in any of the classes.
CHAPTER 4

RESULTS

General data summarization and analyses of the self-regulation strategy scores were dealt with in this chapter. In addition, answers to the proposed research questions will be given.

Analyses Procedures

Item responses were assigned numerical values ranging from 1 to 4, i.e., Never = 1; Sometimes = 2; Most of the time = 3; and Always = 4. The lowest possible total score was therefore 25 and the highest possible total score was 100.

All raw data were punched on a PC and analyzed using the SPSS PC+ software. Research questions 1a, 1b, and 5 were answered through simple correlations; research question 2 was answered through multiple regression analysis; and research question 3 was answered through t-test. As to research question 4, it was answered using the same procedures used to answer
questions 1a, 1b, and 2. In all instances, the p < .05 level served as the criterion for rejection.

Results of Performed Statistical Tests

Research Question 1a

"Is there any significant correlation between overall self-regulation strategies scores and GPA?"

In order to answer this question, a correlation coefficient between academic achievement as measured by GPA and overall self-regulation strategies scores was drawn and yielded a coefficient of .10, p > .05. The correlation between total self-regulation strategies scores and GPA was not significant.

Research Question 1b

"Is there any significant correlation between each of the four self-regulation strategies (goal-setting, self-consequating, self-monitoring, and reviewing records) and GPA?"

To answer this question, each of goal-setting, self-consequating, self-monitoring, and reviewing records was correlated separately with GPA. The observed correlation coefficients between goal-setting and GPA is equal to .05, p > .05; between self-consequating and GPA is equal to .10, p > .05; between self-monitoring and GPA is equal to .05, p > .05; and between reviewing...
records and GPA is equal to .09, p > .05. The obtained coefficients show that no significant correlation existed between any of the four selected strategies and GPA. Accordingly, none of the selected strategies is a relatively good predictor of achievement.

Research Question 2

"Would any of the strategies yield more weight toward predicting academic achievement?"

Multiple regression analysis was performed for the whole sample to check for the significance of each of the selected strategies toward predicting GPA. Table 1 summarizes the results.

Table 1

<table>
<thead>
<tr>
<th>Strategies</th>
<th>Statistical Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
</tr>
<tr>
<td>Goal-setting</td>
<td>.02</td>
</tr>
<tr>
<td>Self-consequating</td>
<td>.27</td>
</tr>
<tr>
<td>Self-monitoring</td>
<td>-.01</td>
</tr>
<tr>
<td>Reviewing records</td>
<td>.18</td>
</tr>
</tbody>
</table>
Results of multiple regression analysis showed that none of the selected strategies had relatively more weight in predicting academic achievement in the selected sample.

Research Question 3

"Would overall self-regulation strategies scores differ significantly across (a) gender and (b) type of schools?"

To answer part (a) of this question, a t-test was performed to compare mean self-regulation strategies scores of males (M = 72.83, SD = 9.26) and females (M = 74, SD = 8.98). The observed t (t = -1.56, df = 293.34, p > .05) indicates a non-significant gender-difference in overall self-regulation strategies scores.

To answer part (b) of the question, a t-test was performed to check for the significance of the difference between Lebanese orientation and American orientation mean self-regulation scores. Results showed that mean self-regulation scores of Lebanese orientation schools were: M = 73.23, SD = 9.60; and those of American orientation schools were: M = 72.95, SD = 8.81. The observed t (t = - .27, df = 291.81, p > .05) indicates a non-significant difference between Lebanese orientation schools and American orientation schools with respect to overall self-regulation scores.
Research Question 4

"How does the relationship between self-regulation (total and subtotal strategies scores) and academic achievement compare across type of school?"

In order to answer this question, data was separated into the type of school orientation the sample belonged to: Lebanese and American. The same statistical tests that were used to answer research questions 1a, 1b, and 2 were used again for each of the two types of school orientation: separate correlation and multiple regression coefficients between self-regulation and academic achievement were obtained for each of the Lebanese orientation schools and the American orientation schools: a t-test was then performed within each school orientation to see whether any gender difference existed between mean self-regulation scores of males and females.

Relationship between self-regulation strategies and achievement in Lebanese orientation schools.

The correlation coefficient between academic achievement (GPA) and overall self-regulation scores for the Lebanese orientation schools was drawn and yielded a coefficient of .24, p > .05. The correlation between total self-regulation scores and GPA was not significant for that sample.

In order to see whether any of the four selected strategies correlated with academic achievement for the Lebanese orientation schools, each of goal-setting, self-consequating, self-monitoring, and reviewing records was
correlated separately with GPA. The observed correlation coefficients between goal setting and GPA is equal to .30, p < .05; between self-consequating and GPA is equal to .14, p > .05; between self-monitoring and GPA is equal to .17, p > .05; and between reviewing records and GPA is equal to .10, p > .05. The obtained coefficients show that among the four selected strategies, only goal-setting yielded a significant correlation with GPA. Accordingly, and for the selected sample, goal-setting could be considered a predictor of achievement in Lebanese orientation schools.

Multiple regression was then performed for the Lebanese orientation schools to check for the weight that a specific strategy contributes to predicting GPA.

Results of multiple regression analysis showed that goal-setting has relatively more weight among the pool of the selected strategies (B = .86, p < .05) in predicting academic achievement in the selected Lebanese orientation schools. Table 2 summarizes the results.

A t-test was then performed to compare mean self-regulation scores of males (M = 71.85, SD = 9.31) and females (M = 74.88, SD = 9.75) in the Lebanese orientation schools. The observed t (t = -1.88, df = 133.53, p > .05) indicates a non-significant difference between male and female self-regulation scores in the selected Lebanese orientation schools.
Table 2
Weight of Each Separate Strategy in Predicting GPA for the Lebanese Orientation Schools

<table>
<thead>
<tr>
<th>Strategies</th>
<th>B</th>
<th>SIG T</th>
</tr>
</thead>
<tbody>
<tr>
<td>Goal-setting</td>
<td>.86</td>
<td>.00</td>
</tr>
<tr>
<td>Self-consequating</td>
<td>.16</td>
<td>.54</td>
</tr>
<tr>
<td>Self-monitoring</td>
<td>.01</td>
<td>.96</td>
</tr>
<tr>
<td>Reviewing records</td>
<td>-.07</td>
<td>.75</td>
</tr>
</tbody>
</table>

Relationship between self-regulation strategies and achievement in American orientation schools.

The correlation coefficient between academic achievement (GPA) and overall self-regulation scores for the American orientation schools was drawn and yielded a coefficient of -.01, p > .05. The correlation between total self-regulation scores and GPA was not significant for the selected sample.

In order to see whether any of the four selected strategies correlated with academic achievement for the American orientation schools, each of goal-setting, self-consequating, self-monitoring, and reviewing records was
correlated separately with GPA. The observed correlation coefficients between goal setting and GPA is equal to -.11, p > .05; between self-consequating and GPA is equal to .06, p > .05; between self-monitoring and GPA is equal to -.05, p > .05; and between reviewing records and GPA is equal to .09, p > .05. The obtained coefficients show that no significant correlation existed between any of the four selected strategies and GPA. Accordingly, none of the selected strategies is a predictor of achievement in the selected American orientation schools.

Multiple regression was then performed for the American orientation schools to check for the weight that a specific strategy contributes to predicting GPA.

Results of multiple regression analysis showed that none of the selected strategies used by the students in American orientation schools has relatively more weight among the pool of the selected strategies in predicting academic achievement.

Table 3 summarizes the results.
Table 3

Weight of Each Separate Strategy in Predicting GPA for the American orientation schools

<table>
<thead>
<tr>
<th>Strategies</th>
<th>B</th>
<th>SIG T</th>
</tr>
</thead>
<tbody>
<tr>
<td>Goal-setting</td>
<td>-.42</td>
<td>.05</td>
</tr>
<tr>
<td>Self-consequating</td>
<td>.17</td>
<td>.46</td>
</tr>
<tr>
<td>Self-monitoring</td>
<td>-.21</td>
<td>.30</td>
</tr>
<tr>
<td>Reviewing records</td>
<td>-.43</td>
<td>.05</td>
</tr>
</tbody>
</table>

A *t*-test was then performed to compare mean self-regulation scores of males (M = 72.70, SD = 9.26) and females (M = 73.19, SD = 8.19) in the American orientation schools. The observed *t* (*t* = -.36, df = 159.23, p > .05) indicates a non-significant difference between male and female self-regulation scores in the selected American orientation schools.
Research Question 5

"Would there be a significant correlation between students’ self-regulation scores as reported by students themselves and as reported by their respective teachers?"

The correlation coefficient between self-regulation scores as reported by students themselves and as reported by their respective teachers was drawn and yielded a non-significant coefficient of $r = .06$, $p > .05$.

In order to see whether any of the four selected strategies as reported by students correlated with teachers’ reporting, each of goal-setting, self-consequating, self-monitoring, and reviewing records as reported by students was correlated separately with the same separate strategies (goal-setting, self-consequating, self-monitoring, and reviewing records) as reported by teachers.

The obtained coefficients show that no significant correlations existed between any of the four selected strategies used by students as reported by the students themselves and those same strategies as reported by these students’ respective teachers. Accordingly, there is an inconsistency between students’ ratings of their self-regulation and that of their teachers.

However, there were significant correlations within teachers’ ratings themselves. In fact, correlations between separate strategies as rated by teachers varied between .97 and .99 at $p < .001$.

The observed correlation coefficients are presented in Table 4.
### Table 4

**Correlation Matrix Between Students’ Reported Use of Separate Strategies (S) and Teachers’ Reported Use of Separate Strategies (T)**

<table>
<thead>
<tr>
<th></th>
<th>GS S</th>
<th>SC S</th>
<th>SM S</th>
<th>RR S</th>
<th>GS T</th>
<th>SC T</th>
<th>SM T</th>
<th>RR T</th>
</tr>
</thead>
<tbody>
<tr>
<td>GS S</td>
<td>1.00</td>
<td>.22</td>
<td>.39*</td>
<td>.41*</td>
<td>-0.03</td>
<td>-0.04</td>
<td>-0.03</td>
<td>-0.04</td>
</tr>
<tr>
<td>SC S</td>
<td>.22</td>
<td>1.00</td>
<td>.26</td>
<td>.17</td>
<td>.09</td>
<td>.09</td>
<td>.09</td>
<td>.10</td>
</tr>
<tr>
<td>SM S</td>
<td>.39*</td>
<td>.25</td>
<td>1.00</td>
<td>.43*</td>
<td>.10</td>
<td>.09</td>
<td>.09</td>
<td>.09</td>
</tr>
<tr>
<td>RR S</td>
<td>.41*</td>
<td>.17</td>
<td>.43*</td>
<td>1.00</td>
<td>.02</td>
<td>.03</td>
<td>.04</td>
<td>.03</td>
</tr>
<tr>
<td>GS T</td>
<td>-0.03</td>
<td>.09</td>
<td>.10</td>
<td>.02</td>
<td>1.00</td>
<td>.98</td>
<td>.99</td>
<td>.99</td>
</tr>
<tr>
<td>SC T</td>
<td>-0.04</td>
<td>.09</td>
<td>.09</td>
<td>.03</td>
<td>.98*</td>
<td>1.00</td>
<td>.97*</td>
<td>.98*</td>
</tr>
<tr>
<td>SM T</td>
<td>-0.03</td>
<td>.09</td>
<td>.09</td>
<td>.04</td>
<td>.99*</td>
<td>.97*</td>
<td>1.00</td>
<td>.99*</td>
</tr>
<tr>
<td>RR T</td>
<td>-0.04</td>
<td>.10</td>
<td>.09</td>
<td>.03</td>
<td>.99*</td>
<td>.98*</td>
<td>.99*</td>
<td>1.00</td>
</tr>
</tbody>
</table>

GS = Goal-setting; SC = Self-consequating; SM = Self-monitoring; and RR = Reviewing Records

* p < .001
CHAPTER 5

DISCUSSION, SUMMARY, and RECOMMENDATIONS

Discussion

In general, this study showed that students' overall use of the selected self-regulation strategies did not show any significant relationship with academic achievement, nor did any of the selected strategies have a significant correlation with GPA. No gender-difference was found in overall self-regulation strategies scores; and none of the selected strategies had more weight in predicting academic achievement. Moreover, students' reported use of self-regulation strategies was found not to be correlated with teachers' reported view of their students' use of self-regulation strategies. As the whole sample was selected from two different types of school - one following the Lebanese orientation in its social context and the other type of school following the American orientation in its social context, the whole sample was devided into two according to the school orientation. These results will be discussed in term of the whole sample and in terms of school type.

We will consider first the results of the whole sample. One possible explanation for the lack of relationship between self-regulation strategy use and academic achievement might be age of the sampled students. Although students
start showing self-regulation at about 10 or 11 years of age (Mischel & Mischel, 1993; Schunk & Rice, 1984; Zimmerman, 1989), cultural differences do in fact exist. The literature review section is basically drawn from the USA. Our culture differs from others, especially in issues regarding child-rearing practices. A possible cause of difference is the age at which Lebanese children start regulating their own behavior toward academic achievement which might be beyond the agreed-upon age in other cultures. This interpretation was confirmed by the results of McCuegar's (1993) comparative study which showed that American sixth to eight graders are more self-regulation strategies than Asians and few other cultures' sixth to eighth graders. Another reason may be that our culture offers other-regulated strategies - as opposed to self-regulation strategies - for academic achievement, causing the relationship between one's own initiated strategies and academic achievement to be non-significant.

On the psychological level, characteristics such as self-efficacy and locus of control are expected to have a correlation between self-regulation processes and academic achievement. Research already proved the effect of perceived self-efficacy on self-regulation: high self-efficacious students display better quality learning strategies than their low self-efficacious peers (Bandura, 1982; Bandura & Cervone, 1983; Schunk, 1984; Zimmerman & Martinez-Pons, 1990). Findings of Zimmerman and Martinez-Pons showed that self-efficacy is greater above the fifth grade; and there exists a correlation of

As to locus of control, students having internal locus of control attribute their success or failure to their own abilities. This gives a higher probability that such students have a higher degree of self-regulation as compared to students having low internal locus of control who attribute their success or failure to luck or task-difficulty.

On another hand, there exists no clear-cut agreed-upon difference between the strategies under study: Although Zimmerman depicted fourteen distinct self-regulation strategies, the true distinction among them in practice might not be so clear. In fact, other researchers in the field might mix the items put in the questionnaire and have them rearranged under the same self-regulation strategies, or even, under different ones. Moreover, since the set of self-regulation strategies that are involved in our study are not universally agreed upon, a further possible explanation for the results can be given: The four strategies under study might not be predictive of self-regulation; other researchers could easily argue for another set of strategies to establish any possible correlation between self-regulation and academic achievement.

Although gender-difference in overall self-regulation scores was insignificant considering the whole sample and the divided sample and that no gender difference was found in the relationship between self-regulation strategies and GPA, the larger majority of research findings shows that (a) there exists
significant gender difference in overall self-regulation strategies scores, and
(b) there exists gender difference in the relationship between self-regulation
strategies and GPA (see a larger review on this topic under section Self-
regulation strategies and gender presented in Chapter 2). Considering the
Lebanese population, we see that the family is a very important aspect of its
life-style. Concern for the family is one of the central values in this culture.
According to Protho (1961), a wife without children—especially without at
least one male child—is pitied. Lebanese parents strongly desire male children
since the male carries for ever his parents' family name. Oriental society is
patrilineal, and the principal difference in sex-roles in child rearing practices
in Lebanon was the greater emphasis for males on advanced education and
employment and the greater emphasis on marriage for females (Protho, 1961).
Even in 1974, the discriminating view about women was still there but to a
lesser extent (Protho & Diab, 1974). Woman's role still centered on the home
but not as much as before. Females were more encouraged than before to get
higher education and to get employment outside the house, especially in
cities more than in villages. As the authors summarize, "there is an increasing
tendency for women to be employed outside the home, especially before
marriage, and for husbands of women so employed to favor the idea, at
least conditionally" (Protho & Diab, 1974). However, the emphasis on
sex-discriminated roles for males and females has lessened consistently
during the past two decades. We can realize this fact considering the
increasing number of females going for higher education in colleges and universities, and the increasing number of females achieving prominent roles in the social, educational, and political life of Lebanon. Nevertheless, although in families males might still be slightly more nurtured by their parents, whereas girls might still be left to self-regulate their own learning and education achievement, having females achieving more prominent roles in different domains of life may be the reason behind not finding significant differences between gender as to the use of overall self-regulation strategies and their correlations with achievement.

On a comparative level, results showed that students in schools following the Lebanese orientation had goal-setting among the other selected strategies as a significant predictor of GPA - $r = .30, p < .05$. Multiple regression analysis showed that goal-setting, among other strategies, had relatively more weight in predicting academic achievement. Surprisingly, this is not the case at all with the students in schools following the American orientation. Indeed, no correlation was found between overall strategies or any of the selected strategies with achievement. Multiple regression analysis in American orientation schools showed that none of the strategies was assigned a significant weight to predict GPA. Yet, two strategies had a close-to-significance weight in predicting achievement: Goal-setting had a weight of $-.42$; and review of records had a weight of $-.43$, both obtained at $p = .05$. These results are surprising, especially that the majority of
previous researches showed positive correlation between most of the selected strategies and academic achievement - especially with goal-setting.

As to teachers' perception of their students' use of self-regulation strategies, results showed a discrepancy between teachers' perception and students' perception of the use of those strategies. In fact, no correlation was found between teachers' perception and students' perception of the use of strategies. It is worth mentioning, however, that significant correlations ranging between .97 and .99, p < .001 were found within the teachers' ratings of their students' use of self-regulation strategies. For example, Table 4 shows a correlation of .98, p < .001 between teachers' rating of goal-setting and self-consequating, and .99, p < .001 between teachers' ratings of review of records and self-monitoring. As Leo and Galloway (1994) found in their research, a mismatch exists between children's classroom experience and teacher's perceptions of their experience. In fact, both authors examined the relevance of three different styles of motivation in relation to primary teachers' understanding of their students' motivation and behavior. Teachers perceived maladaptive motivational styles more frequently in boys than in girls, though evidence suggests there were no gender differences. In this research, the discrepancy between teachers' view and students' view of the use of strategies might be due to the fact that students at their age level - i.e. 8.5 to 9.5 years - may not be yet mature enough to become so much aware of some possible learning strategies like some of those they encountered in the questionnaire. Consequently,
their responses to those items at time of filling the questionnaire might have been completely made up to meet either their perceived self-efficacy and/or to meet what they would have liked to be using among the pool of self-regulation strategies mentioned in the questionnaire. If that was the case with the students at time of filling the questionnaire, then the discrepancy found in the obtained results is both understandable and logical. In all cases, the results of our research should be an incentive to our teachers to get to know their students better and to know more about their study styles in order to be able to help them more efficiently and more professionally. As Rowser (1994) concluded her research on teachers’ expectations, "an equal educational opportunity should not be dependent on race, gender, test scores, SES, teachers’ differential expectations, or lack of teacher involvement and institutional commitment." (Rowser, 1994)

Finally, it is possible that the assumptions based on which the whole study was constructed were not true. In other terms, it could have been possible that the children did not respond truthfully to the items because of not much concern to the importance of this issue, or any other reason that arose in the children’s minds at time of filling the questionnaire. In that case, other measure of self-regulation should assist this questionnaire - which as a matter of fact proved to be highly reliable ($r = .83, p < .001$) through test-retest procedure - in order to give a more reliable index of self-regulation.
Summary

This study had five main objectives: to check (a) if there was any statistically significant relationship between the overall self-regulatory strategies scores and academic achievement, (b) if there was any statistically significant relationship between any of the selected four self-regulatory strategies scores and academic achievement, (c) which of the four self-regulation strategies had relatively more weight in predicting academic achievement, (d) if there was any significant gender-difference in overall use of self-regulation strategies, (e) how would the relationship between self-regulation (total and subtotal strategies scores) and academic achievement be compared across type of school, and (f) whether there would have been any significant correlation between students’ self-regulation scores as reported by students themselves and as reported by their respective teachers. The self-regulation strategies under investigation were the following: (a) goal-setting, (b) self-consequating, (c) self-monitoring, and (d) reviewing records. GPA was taken as the measure for academic achievement. A review of the literature was then presented taking into account the four strategies along with other variables that may have affected the correlations - namely, gender-difference, economic status (ES), and culture-difference.

An overview of the methodology was presented concerning the sampling procedures, administration of the test, and analysis of the results. The instrument was a questionnaire previously used in an unpublished MA project. Test-retest reliability coefficient of the questionnaire after 30 days interval was
observed to be $r = .83$ at $p < .001$. After the consent of the directors of the schools which the sample was drawn from was obtained, this questionnaire was administered to that sample: 315 Lebanese fourth and fifth grade students - 8.5 to 9.5 years - representing two school orientations, namely, Lebanese and American. Means and standard deviations were calculated for each category. Simple correlation coefficients were calculated to determine whether there existed any significant relationship between (a) overall self-regulation scores and GPA and (b) scores on separate self-regulation strategies and GPA. Multiple regression was performed to see whether any of the four strategies had relatively more weight in predicting GPA. T-test was conducted to see whether any significant gender-difference existed in overall use of self-regulation strategies and achievement. The same statistical tests just mentioned - i.e. simple correlation, multiple regression, and t-test - were performed again to check whether any statistical difference would exist in the sample comparing results across type of school.

Results showed that overall use of strategies was not correlated with GPA neither in Lebanese orientation schools nor in American orientation schools. In fact, correlation coefficients were found to be $r = .24$ and $r = -.01$ respectively, both at $p > .05$. Among strategies, no separate strategy was found to be significantly correlated with GPA neither in Lebanese orientation schools nor in American orientation schools. Multiple regression showed that goal-setting had the highest weight among other strategies in predicting GPA in the Lebanese
orientation schools; while no separate strategy showed to have any significant weight in predicting GPA in the American orientation schools. T-test showed no significant gender-difference neither in the Lebanese orientation schools nor the American orientation schools in overall use of self-regulation strategies. Finally, simple correlation showed no relation between self-regulation strategies use as reported by students themselves and as reported by those students' respective teachers.

Results were discussed in terms of social cognitive interpretation of self-regulation. Age of the sampled students and cultural differences in child-rearing practices may have accounted for the lack of relationship between self-regulation strategies and GPA. The fact that gender-difference in self-regulation scores was found not to be significant may have been present due to the decreasing discriminated view about women and their roles in the society and the family during the past two decades, contradictory to what it was in earlier times. The mismatch between students' perception of their use of strategies and teachers' view may have been present be due to teachers' understanding of their students' motivation and behavior.

Taking into consideration the limitations given at the beginning of this research, recommendations for further research are also presented.
Recommendations

Taking into consideration the limitations given at the beginning of this research, the following section presents the researcher’s recommendations that are worth taking into recommendation in future researches:

1. Self-efficacy and locus of control should be taken as moderator variables since they may affect the relationship between self-regulation strategies and academic achievement.

2. It is recommended to take into consideration other cognitive strategies and see their relationship with academic achievement.

3. Since the interpretation of the results of students’ use of self-regulation strategies and their relation to academic achievement differed between taking the results of the sample altogether and splitting it into a Lebanese and American orientation in school atmosphere as to their, it is recommended to study thoroughly the difference between the two types of schools and to include on a comparative basis the French orientation in social context.

4. Rural- and urban- private schools were included in this research without being taken as moderator variables. Further research might take this point into consideration on a comparative basis.

5. Only private high-tuition schools were included. It is worth comparing results of students coming from such schools with those coming from public and low-tuition schools.
6. The sample was composed of only fourth and fifth graders. A comparison of self-regulation strategy use is recommended across a more varied age level group.

7. It is recommended that future research takes into consideration the use of self-regulation strategies across subject matters separately and comparatively instead of taking only one GPA for the whole or a selected part of subject matters.

8. Since the discrepancy between teachers' perception of their students' use of self regulatory strategies and their students' actual use of such strategies is so large and may be attributed to the age-level of the sample, it is recommended that future research investigates this discrepancy across various age-levels.

9. It is recommended to investigate further the discrepancy between students' responses and teachers' responses; and add to it for more reliability parents' input too.

10. The questionnaire as an instrument might not be the best device to measure self-regulation. It is worth studying other devices as well that could assist questionnaires in assessing students' study habits.


APPENDIX 1

GRADE : 4 5
SEX : Male Female

This questionnaire is about your study habits. Please circle the word that matches the way you study.

<table>
<thead>
<tr>
<th>Question</th>
<th>Never</th>
<th>Sometimes</th>
<th>Most of the Times</th>
<th>Always</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. When you get your tests back, do you read them and try to learn from your mistakes?</td>
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<tr>
<td>2. While you are doing your homework assignments, do you write down the points you did not understand so that you'll ask about them?</td>
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<td>3. Do you divide your assignments and try to do the easiest first and then the more difficult?</td>
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<td>4. Do you tell yourself nice things when you complete your homework?</td>
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<td>Question</td>
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<tr>
<td>5. Do you play or watch television before you do your homework assignments?</td>
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<tr>
<td>6. Do you ask yourself questions to make sure you know the material you have been studying?</td>
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<tr>
<td>7. In the middle of the year, the teacher wants to give you a test on everything that you have done so far. In studying for this test, do you go back to your old homework?</td>
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<tr>
<td>8. While studying for a test, do you write down the points you did not understand so that you'll ask about them?</td>
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<tr>
<td>9. When you are preparing for a test, do you tell yourself that I would like to get a specific grade?</td>
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<tr>
<td>10. If you were not told by your teacher what was wrong in your test or assignment, would you try to find out what was wrong either by yourself or by asking someone else?</td>
<td>Never</td>
<td>Sometimes</td>
<td>Most of the Times</td>
<td>Always</td>
</tr>
<tr>
<td>11. While the teacher is explaining, do you write down the points you did not understand so that you'll ask about them?</td>
<td>Never</td>
<td>Sometimes</td>
<td>Most of the Times</td>
<td>Always</td>
</tr>
<tr>
<td>12. Do you study from your class notes when you prepare for a test?</td>
<td>Never</td>
<td>Sometimes</td>
<td>Most of the Times</td>
<td>Always</td>
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<tr>
<td>13. Do you study from your class notes and your textbooks when you prepare for a test?</td>
<td>Never</td>
<td>Sometimes</td>
<td>Most of the Times</td>
<td>Always</td>
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<tr>
<td>14. Even when the teacher does not do practice exercises, do you do these exercises on your own?</td>
<td>Never</td>
<td>Sometimes</td>
<td>Most of the Times</td>
<td>Always</td>
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<tr>
<td>15. Do you work hard to get a good grade even when you don't like the subject?</td>
<td>Never</td>
<td>Sometimes</td>
<td>Most of the Times</td>
<td>Always</td>
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<tr>
<td>16. Do you study from your textbooks when you prepare for a test?</td>
<td>Never</td>
<td>Sometimes</td>
<td>Most of the Times</td>
<td>Always</td>
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<td>Question</td>
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<td>17. Do you stop watching television or playing with your friends when you have not completed your homework?</td>
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<td>18. Even when the teacher does not tell you to answer end-of-chapter review questions, do you answer these review questions?</td>
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<tr>
<td>19. When you are reading, do you stop every once in a while and review what you have read?</td>
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<td>20. Do you tell yourself nice things when you do well on a test?</td>
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<td>21. Do you have specific ways to prepare for an announced test?</td>
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<td>22. Do you stop going to the movies, watching television, or playing with your friends when you get a low grade?</td>
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<tr>
<td>23. After you read materials for class assignments, do you close the book and then ask yourself questions about what you have just read?</td>
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<tr>
<td>Question</td>
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<td>Sometimes</td>
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<tr>
<td>24. Before doing the exercise of a particular chapter, do you read the chapter first, and then do the exercise?</td>
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<tr>
<td>25. Do you write down every important point of a lesson (write a summary) while you study?</td>
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</tbody>
</table>

THANK YOU
APPENDIX 2

AMERICAN UNIVERSITY OF BEIRUT
EDUCATION DEPARTMENT

Beirut, (Date)

(School Name)

Attention: (Name of Principal or Director, with Title)

Dear (Sir, Madam, Dr.)

I the undersigned, Imad Rubeiz, am a graduate student in Education Department, and now in the process of working on my thesis:

"The Relationship Between Self-Regulation and Academic Achievement in Lebanese Elementary Private Schools Students"

The following is a synopsis of the proposed study and its methodology:

The purpose of this research is to investigate: (a) The relationship between a set of self-regulation strategies and academic achievement - as measured by grade-point average (GPA), (b) which of the selected strategies will correlate higher with academic achievement, and (c) whether there will exist any significant gender difference in overall self-regulation strategies scores. Four self-regulation strategies were selected; namely, goal-setting, self-
consequating, self-monitoring, and reviewing records. A sample of approximately 250 fourth and fifth graders will be selected from four different private schools — two of which representing a Lebanese orientation in their social context and the other two representing an American orientation. All of the selected schools share the teaching of English as the 2nd language. The selected students will be asked to respond to a self-regulation strategy use questionnaire. Test-retest and internal consistency reliability coefficients of the questionnaire will be driven. Multiple regression analyses along with a t-test will be performed to answer the proposed research questions.

(Name of the School) has been chosen among other schools to represent the (Lebanese / American) orientation in this study. After your consent, I would appreciate you helping me in accessing the fourth and fifth grades after I meet with their respective teachers for further coordination. Your students will only be asked to answer in writing the questionnaires I will distribute to them (enclosed, please find a copy). I also need to take the GPA of the students (or equivalent in other grading system) who will be included in the sample. Students' names are neither required nor will be mentioned on the questionnaires; only matching the pupil's questionnaire with his GPA will be needed. Over-and-above, selected teachers will be asked to respond to similar questionnaires indicating their perception of the way two or three selected student use self-regulation strategies. This will be essential for comparison. All the data will be treated as strictly confidential. The whole
process needs no more than twenty to thirty minutes in each class. A further step might be needed: After a certain period of time (approximately 10 to 30 days), a random sample will be chosen among the students that previously answered the questionnaires. They will be asked anew to answer the same questionnaire. This method will be done to assess the test-retest reliability coefficient which is essential in this study to prove consistency in obtained results. This session will also not take more than 30 minutes with the selected students. A copy of the study's results will then be forwarded to you when ready.

Counting on your help and further support,

I remain,                        Approved,
Imad Rubeiz,                      Sanar Mukallid,

M.A. Student,                    Assistant Professor & Advisor,
Education Department,            AUB Education Department,
AUB                              AUB

REF: (MATHESES) A:\LTR1.WRI