SELF-REGULATED LEARNING STRATEGIES AND SCHOOL PERFORMANCE IN HIGHER AND LOWER STUDENTS IN SECONDARY AND PREPARATORY SCHOOL

By

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ABSTRACT

This study attempted to examine whether there were differences between high-achieving and low achieving students on self regulation strategies. Three hundred adolescents participated (Mean age = 17.4 years) to measure their own self regulated learning strategies and collected their academic scores from the record office of the schools. The analysis of the data showed that self regulated learning strategies have statistically significant contribution to the students' school performance. The results of the general MANOVA (Multivariate Analysis of Variance) tests showed that the mean differences for those with high and low achiever were statistically significant for the academic self-efficacy (F = 4.349, p < 0.05), self regulation (F = 4.746, p < 0.05), intrinsic value (F = 3.741, p < 0.05), and time management attitude (F = 7.947, p < 0.05) self regulated learning.

Keywords: Self Regulated Learning, Adolescence, School Performance, High and Low Achievers.

INTRODUCTION

During the teaching learning process, learners are given the lesson aims and objectives, which address the skills they should be able to perform in the subject matter. Students are gaining knowledge in learning that is necessary to perform skills. The teacher provides feedback on their accomplishments and provides insight on strategies that could be used to increase performance on academic tasks. Once the student has mastered the skills, they are able to transfer and apply them to other situations that may differ from the one in which the skill was learned.

Students set the goals, employ the plan, monitor goal progress, and evaluate the level of success according to criteria they have set. Instructors take it upon themselves to structure the learning environment and motivate students through extrinsic rewards or verbal gratification. In order to understand what self-regulated learning is, the learner must be aware of the phases, processes, sub processes, and factors responsible for self-regulation. There are necessary constructs that need to be recognized and the employment of appropriate actions and behaviors to facilitate this process. They are important to the development and assessment of self-regulated learning. The value of the constructs, phases, processes, and strategies of self-regulated learning have been derived and formulated according to a variety of theoretical frameworks and established practically through empirical findings.

The variety of models for conceptualizing self-regulated learning has led to a wide array of definitions for the construct. Like many terms in psychology, self-regulated learning is a term that can be used in several contexts, and as a result, it has many different meanings for researchers in an array of subject domains (Kaplan, 2008). While the term suggests that the construct only relates to school and classroom learning, self-regulation of learning can also take place in other contexts including, but not limited to, self-study at home, extracurricular activities, outdoor education, museum learning activities, and distance education (Kaplan, 2008; Carroll & Purdie, 2007). However, in the context of the research presented in this study, self-

regulated learning will be understood in the specific context of school. According to Wolters (2010) self-regulated learning is an active, constructive process whereby learners set goals for their learning and then attempt to monitor, regulate, and control their cognition, motivation, and behavior, guided and constrained by their goals and the contextual features in the environment.

In addition, the particular definition of learning adopted in this research from a constructivist approach, this definition suggests that while all learners self regulate, some possess better strategies and a deeper understanding of appropriate strategy use than others (MacLellan & Soden, 2006).

Numerous studies have been conducted on relationships of self-regulated learning (SRL) and academic achievement. However, contradictory results are suggested within this research because only certain aspects of self-regulated learning and academic achievement are investigated, for example, self-efficacy only. Lane (2004) suggests that self-efficacy and self esteem are more related with academic achievement of students, while other studies suggest the opposite. To understand how different self-regulated learning strategy relationships are affected school performance of high and low achiever students, all forms of SRL should be studied. This paper examines self-regulated learning and school performance in high and low achiever students in secondary and preparatory school to propose that additional research be conducted to better understand how self-regulated learning strategies influence school performance of high and low achiever students.

1. Literature Review

Self-regulated learning is the actions, thoughts, and feelings of students working toward attaining a goal. Therefore, contrasting to traditional teaching methods, this widely-accepted definition suggests that students need to be given opportunities to work toward goals they have set for themselves and to devise their own learning experiences (Zimmerman, 1989).

Self-regulation has a reputable history in cognitive psychology with roots in Bandura's social-cognitive theory (Bandura,1986), which suggests that learning occurs as a dynamic interaction of three factors constantly influencing

each other: person, behaviour, and environment (Bandura, 1991; Martin & McLellan, 2008; McAlister, Perry, & Parcel, 2008). For instance, an individual's beliefs, goals, and self-perceptions can influence their behaviours and their behaviours can, in turn, influence their thoughts and emotions. Additionally, an individual's behaviours can determine elements of their environment and their behaviours can also change as a result of their environment. Finally, physical and social factors of an individual's environment can influence their beliefs and cognitive functioning and vice versa (Bandura, 2001). Bandura included self-regulation in his social-cognitive theory of human behaviour, as a process through which individuals control their external environment by conducting self-observations and judgments as well as self-reactions (Bandura,1991; Schunk, 2005). More specifically, self-regulation focuses on the result of behaviour that can be seen as the product of the individual-environment interaction (Dinsmore, Alexander, & Loughin, 2008). As it allows individuals to adapt to their social and physical environments, many contemporary psychologists view self-regulation as defining feature of being human, allowing us to live as we do (Bandura, 2001; Martin & McLellan, 2008; Schmeichel & Baumeister, 2004). Several researchers have supported the idea that the development of self-regulation should be the focus of social interaction situations including, but not limited to, learning in the classroom, as it is such an influential feature (Baumeister & Vohs, 2007; Martin & McLellan, 2008).

Zimmerman (1989) defined self-regulated learning as involving goal- directed cognitive activities that students use, modify, and continue to use. This definition highlights the longevity of self-regulated learning which links to the earlier discussion regarding the recent interest seen in developing life-long learning skills among students. Later, Zimmerman (2002) made further modifications to this definition of self-regulated learning and understood it as involving goal setting, adopting strategies to attain goals, monitoring performance, restructuring the physical and social context to be compatible with goals, managing time on tasks, self-evaluation, attributing causation to achieved results, and adapting future strategies and methods for goal attainment. Pintrich and De Groot (1990)

pointed out that self-regulated learning involves meta-cognitive strategies including monitoring, management of effort on academic tasks, and cognitive strategies students use to learn material like rehearsing information and identifying important points.

Pintrich (2004) lists the self-regulatory activities involved in each phase in four separate areas: cognitive (which includes meta-cognitive), motivation and affect, behaviour, and context. Aligning with the original measurement tool, for Pintrich and De Groot (1990), self-regulated learning is defined collectively by three components: meta-cognitive strategies including planning, monitoring, and modifying; management of effort on academic tasks, which includes elements of motivation; and the cognitive strategies students use to learn material including rehearsing information and identifying important points.

Self-regulated learning refer to the actions used by the students to get information, or to the skills that involve agency, purpose and instrumentality perceptions (Zimmerman, 1989, P.329). According to Pintrich and De Groot (1990, P.33), three Self-regulated learning strategies are very important in classroom performance, namely cognitive strategies, meta cognitive strategies, and effort management strategies.

In summation, the dimensions that involve self-observation, self-judgment, and self-reaction are closely aligned with executive functions, meta cognitive strategies, self efficacy, and time management, in that, all of these dimensions embody various patterns of self-monitoring, planning, as well students' motivational beliefs (Garner, 2009). As dimensions of self-regulated learning, students' executive functions, meta cognitive strategies, academic self-efficacy, and time management could contribute to academic performance in such a way that they distinguish between low and high achieving students.

Researchers (Al-Alwan, 2008; Ruban & Sally, 2006; VanZile-Tamsen & Livingston, 1999) have turned to the self-regulated learning model in attempts to better understand the individual differences in academic performance, with particular emphasis on high and low-achieving students. Pintrich and De Groot (1990) found that high achievers reported more use of self-regulated learning strategies than lower achieving students.

The primary purpose of the present study was to investigate the relationship of self-regulated learning strategies and academic achievement of students. A second purpose was to explore whether there are differences between low and high-achieving students in terms of the underlying factors identified in the factor structure (e.g., executive functions, meta cognitive strategies, academic self-efficacy, and time management, or some type of combined variables). To undertake the study the following leading hypotheses were formulated.

H1: There is a significant influence of self-regulated learning on school performance of learners

H2: There is a statistically significant difference in self regulated learning of adolescents due to different types of school performance

H3: There are mean variations between high and low performer groups in scores on self-regulation, intrinsic value, cognitive strategies, academic self-efficacy, and time management.

2. Methods

2.1 Research Design

In this study, data were reported using quantitative analysis. A descriptive survey design was used as data were systematically collected from a relatively large sample. As a survey design typically utilizes a questionnaire or an interview to collect data from a specific population, a questionnaire was used to collect data.

2.2 Participants

300 students of grade 9 ,10, 11, and 12 from one government high school in Woldia, Ethiopia namely Woldia Secondary and Preparatory School was randomly selected for the study. The research participants were selected using proportional allocation stratified random sampling (based on sex and grade level). The average age of the respondents was 17.4.

2.3 Materials

The data was collected via the Motivated Strategies for Learning Questionnaire (Pintrich & De Groot,1990) and school performance of students. The Pintrich and De Groot

self-regulated learning scale (1990) was used to measure the self-regulated learning strategies. An example of an item is, "When I take a test I think about how poorly I am doing" and "Before I begin studying, I think about the things I will need to do to learn". The items had five alternatives which could be scored 1, 2, 3, 4, or 5, where 1 means 'Never true of me', 2- 'Seldom true of me', 3- 'Sometimes true of me', 4- 'Generally true of me' and 5 means 'Always true of me'. Reliability was tested using the Cronbach's alpha method for the sub-scales of self-efficacy, intrinsic value, test anxiety, and usage of cognitive and self-regulatory strategies; alpha coefficients of which stood at 0.79, 0.73, 0.75, 0.78, and 0.74, respectively. The reliability coefficient was 0.82.

In the present study, school performance is defined as the high school students average scores in all subjects. The average scores from grade 9 first semester to the present semester (in all subject areas) for each student were collected from record offices of the high school involved in the study to measure academic achievement. Then each of the average scores was transformed into Z-scores and the average of the Z-scores for each student was used for the analyses. The scores were transformed into Z-scores to allow for maintain the normalization among scores of students from different schools and grade levels.

2.4 Procedures

For high and preparatory school students in Ethiopia, English is a foreign language and as a result students may have considerable difficulty in English. Therefore, the questionnaire was translated into Amharic, the national language of the country, by two translators who are lecturers in the Department of English at the researcher's work place (Woldia University). The questionnaire was first translated into the Amharic language by a bilingual language expert who was not informed the objective of the study. Then another bilingual language expert had back-translated the questionnaire into English without having access to the original instruments. If minor differences occured, the forward and backward translations were corrected by the researcher based on rigorous discussions with the translators. Permission to conduct the study and approach the students were obtained from the

participating high schools by briefing them about the purpose and importance of the study. In addition, the participants were informed that they can give their informed consent freely and voluntarily. The self-report questionnaire was administered by the researcher with the help of two senior teachers, who facilitate questionnaire administration. After the completion of the questionnaire, the participants were thanked by the researcher for their cooperation. For the main study, two months later, at the end of second semester, students results were obtained from the official records of the Registrar's office of the respective high schools based on student ID numbers which the students indicated on the self-report questionnaires.

3. Results

Students provided basic demographic information including sex, mother education, father education, and marital status. Table 1 explained the demographic characteristics of the research sample in detail.

Table 1 indicates that 144 (48%) of participants were females and 156(52%) were males. Table 1 also shows that 11(3.67%) of parents were single, 234(78%) of them

Demographic Variables	Frequency	Percent
Sex of Students (N=300)		
Male	144	48
Female	156	52
Caregiver Marital Status (N=300)		
Single	11	3.67
Married	234	78
Divorced	31	10.33
Separated	17	5.67
Other	7	2.33
Level of Mother Education (N=300)		
No Formal Education	13	4.33
Elementary/Junior Secondary	41	13.67
Senior Secondary	78	26
Certificate/Diploma	94	31.33
First Degree and Above	74	24.67
Level of father education (N=300)		
No Formal Education	7	2.33
Elementary/Junior Secondary	33	11
Senior Secondary	84	28
Certificate/Diploma	83	27.67
First Degree and Above	93	31

Note: Frequency and percentage of demographic variables

Table 1. Demographic Profiles of the Respondents

married, 31(10.33%) of them divorced, 17(5.67%) of them separated and 7(2.33%) of them were others. Table 1 points out that 13(4.33%) of mothers were not gone to formal education, 41(13.67%) of them completed elementary/ junior secondary, 78(26%) of them attended senior secondary, 94(31.33%) of them had certificate or diploma, and 74(24.67%) of them had first degree and above.

As shown in Table 2, there were inter correlation between the independent and dependant variables. Therefore, these predictive variables had significant correlations with students' school performance. Self regulation had shown better statistically significant relation with students' academic achievement (r= 0.709). Similarly, academic self-efficacy had significant relation with school performance of students (r=0.649). The time management attitude was significantly and positively correlated with school performance; it is also significantly and positively correlated with the academic self-efficacy and self regulation and the intrinsic value was positively and significantly correlated with school performance, self regulation, academic self-efficacy, and time management attitude. Whereas, self regulation and test anxiety was negatively correlated. Test anxiety had negative correlation with school performance (r = -.615).

The multiple correlation coefficient was R = 0.5751 and the coefficient of determination was R^2=0.3307. The multiple correlation (Ry.123…9) shows a significant relationship between students' school performance (y) and a combination of the independent variables (F9, 290 =15.9222). The coefficient of determination (R2Y.123 …9) shows that 33.07 % of the variability in school performance

Variables	Regression Weight (bi)	Standard Error	Beta Coefficient	t
Sex (X1)	-0.5769	0.9476	-0.0296	0.6874
Marital Status (X2)	1.8349	1.1970	0.0943	0.2973
Parental Education (X3)	1.5211	1.6228	0.0553	0.1493
Academic Self-efficacy (X4)	0.1491	1.8585	0.0044	2.7134*
Intrinsic Value (X5)	-0.1812	2.5453	-0.0036	1.0413
Test Anxiety (X6)	1.3854	0.9784	0.0698	-0.2099
Cognitive Strategies (X7)	0.1581	0.5045	0.0153	1.0934*
Self Regulation (X8)	0.7615	0.0866	0.4415	3.7404*
Time Management Attitude (X9)	0.3423	0.0664	0.2637	4.1731*

* p < 0.05 Constant = 51.6233

Table 3. Multiple Regression Model Analysis of the Role of Predictor and Mediate Variables on School Performance

was accounted for by the linear combination of the independent variables (Table 3).

The results from independent sample t-tests supported hypothesis that the high-achieving group would perform better than the low-achieving group in school performance. Independent sample t-tests in Table 4 showed that there were significant variations in the scores of self regulated learning between the higher and lower performer groups. The high-achieving group significantly differed from the low-achieving group in the mean of SRL, t(298) = 4.917, p < 0.01 in favor of the high performer.

The results of the general MANOVA tests, the associated results are summarized in Table 5. The results indicated only four statistically significant differences out of six. That is, the mean differences for those with high and low achiever were statistically significant for the academic self-efficacy (F = 4.349, p < 0.05), self regulation (F = 4.746, p < 0.05), intrinsic value (F = 3.741, p < 0.05), and time management attitude (F = 7.947, p < 0.05) self regulated learning. In each case, the group which reported high achiever had significantly better academic self-efficacy, self regulation, intrinsic value, and time management attitude self regulated learning than those who reported low achiever.

Variables	1	2	3	4	5	6	7
ASE	1						
IV	0.201**	1					
TA	0.010	-0.349**	1				
CS	0.093	0.079	-0.048	1			
SR	0.297**	0.613*	-0.410**	0.301**	1		
TMA	0.278**	0.478**	0.309*	0.091	0.607**	1	
SP	0.649**	0.341*	-0.615*	0.409**	0.709**	0.317**	1

Note: ASE=Academic Self-efficacy, IV=Intrinsic Value, TA=Test Anxiety, CS=Cognitive Strategies, SR= Self Regulation, TMA=Time Management Attitude, SP= School Performance
* p < 0.05, two tailed. ** p < 0.01, two tailed, N=300

Table 2. Correlation Matrix for Predictor and Outcome Variables

Groups	N	Mean	SD	df	t
High Achievers	157	78.23	17.49	298	4.917**
Low Achievers	143	71.94	28.34		-0.073

Note: **p< 0.01   SD= Standard deviation, df= Degrees of freedom

Table 4. Independent t-test, Differences Between Means of Self-regulated Learning in High and Low Achievers

Source	Dependent Variable	df	Mean Square	F	P-value	Partial Eta Square
Academic Self-efficacy	High Achiever	157	2.98			
	Low Achiever	143	1.97	4.349	0.007	0.904
Test Anxiety	High Achiever	157	2.43			
	Low Achiever	131	2.91	2.907	0.097	0.304
Self Regulation	High Achiever	157	3.54			
	Low Achiever	143	3.23	4.746	0.013	0.619
Cognitive Strategies	High Achiever	157	2.58			
	Low Achiever	143	2.31	1.473	0.139	0.143
Intrinsic Value	High Achiever	157	2.68			
	Low Achiever	143	2.07	3.741	0.034	0.571
Time Management Attitude	High Achiever	157	3.94			
	Low Achiever	143	3.41	7.947	0.006	0.974

Note * $p < 0.05$

Table 5. Summary of the MANOVA Test Results: The Mean Self Regulated Learning Scores for each Achieving Category along with the F and P values

4. Discussion

The present findings showed that self regulated learning has an effect on students school performance. The coefficient of determination shows that 33.07% of the variability in school performance was accounted for by the linear combination of the independent variables. The finding is consistent with the findings of previous studies (Jarvela & Jarvenoja, 2011; Zimmerman, 2008; Wolters, 2011; Harris, Friedlander, Sadler, Frizzelle, & Graham, 2005). Self-regulation is essential to the learning process (Jarvela & Jarvenoja, 2011; Zimmerman, 2008). It can help students create better learning habits and strengthen their study skills (Wolters, 2011), apply learning strategies to enhance school outcomes (Harris, et al., 2005), monitor their performance (Harris et al., 2005), and evaluate their academic progress (de Bruin, Thiede, Camp & Redford, 2011). In addition to self-regulation, motivation can have a pivotal impact on students' academic outcomes (Zimmerman, 2008). Without motivation, SRL is much more difficult to achieve. This paper will discuss SRL and how it relates to motivation. Additionally, this review will present methods and strategies that teachers can use to promote SRL to help their students become life-long learners in and out of the classroom. self-regulated learners also perform better on academic tests and measures of student performance and achievement (Schunk & Zimmerman, 2007).

Bembenutty (2006, P.5) found that SRL and motivational beliefs were the strongest positive predictors of academic achievement. Parental active involvement, gender and ethnicity tended to be the negative predictors of mathematics achievement, whereas self-efficacy beliefs, efforts at regulation, and intrinsic motivation were found to be strong positive predictors of academic achievement. Radovan (2011, P.220) found that goal-setting, the value of the tasks, self-efficacy and effort-regulation were the key strategies which led to better academic achievement in the distance education programme. Chen (2002, pp.19-20) did a study to identify the type of SRL strategies that related to academic achievement. It was found that effort regulation seemed to help the students to do well in a lecture-type of learning environment. The students could control distraction and concentrate to learn computer concepts, so that they achieved high test scores (Chen, 2002).

In addition to the above study, Pelt (2008) examined the association of SRL with school performance. According to the MSLQ results, no significant relationship was found between SRL and school performance. However, according to the results of the SRLI, high-achievers used more SRL and more advanced strategies than the low achieving students. Thus, the MSLQ revealed that SRL may not relate significantly with school performance (Pelt, 2008).

Zimmerman (2002) said that self regulated students have high motivation and adaptive learning methods, which means that they tend to be successful in their academic

work, and optimistic about their futures. If adolescents tend to set goals and consciously plan their academic studies, they are likely to plan other areas of their lives, such as their friendships, their health and fitness programmes, their involvement with their families and the community, their engagement in the environment, and in respect of their personal well-being activities (Zimmerman, 2002). Themanson et al. (2008) findings that self-efficacy is positively associated with the maintenance of cognitive functions. According to Barkley (2012), time management strategies are essential to every act of reasoning that precedes and directs actions toward goals.

In a study of high school students, Labuhn, Zimmerman, and Hasselhorn (2010) found that learners who were taught SRL skills through monitoring and imitation were more likely to elicit higher levels of academic self-efficacy (i.e., confidence) and perform higher on measures of academic achievement compared to students who did not receive SRL instruction. It seems as though SRL can make the difference between academic success and failure for many students (Graham & Harris, 1993; Kistner, Rakoczy, & Otto, 2010).

With respect to the differences between high-achieving students and low achieving students in cognitive strategies, these findings support those of Meichenbaum and Biemiller (1998) that high-achieving students have been found to possess more meta cognitive knowledge than low-achieving students. Also, the differences between high-achieving students and low-achieving students in knowledge monitoring ability are supported by the existing research findings that students' meta cognitive monitoring skills differed in high-achieving students (Hacker, Bol, Horgan, & Rakow, 2000; Hacker, Bol, & Bahbahani, 2008).

These results support the existing research findings that the Perceived Self Regulation of time management strategies predict the level of academic achievement in college students (Balduf, 2009; Britton & Tesser, 1991; Macan, Shahani, Dipboye, & Phillips, 1990; Tanrıögen & Işcan, 2009; Wells, 1994). The perceived self-regulation of self-efficacy predict the level of academic achievement in college (Chemers, Hu, & Garcia, 2001; Coutinho, 2008; Lane, 2004; Pajares, 2006).

Conclusions

Based on the results of the study, the following conclusions were drawn: With respect to the self regulated learning strategies in student school performance, self-regulation had shown better statistically significant relation with students' school performance (r= 0.709). Similarly, academic self-efficacy had significant relation with school performance of students (r=0.649). The time management attitude was significantly and positively correlated with school performance; it is also significantly and positively correlated with the academic self-efficacy and self regulation and the intrinsic value was positively and significantly correlated with school performance, self-regulation, academic self-efficacy, and time management attitude. The multiple regression shows a significant relationship between students' school performance (y) and a combination of the independent variables. The coefficient of determination shows that 33.07% of the variability in school performance was accounted for by the linear combination of the independent variables.

Regarding the fitness of the proposed integrated self-regulated learning model of school performance, the model fits satisfactorily the empirical data for the overall sample students. Academic self-efficacy, intrinsic value, test anxiety, cognitive strategies, self regulation, and time management attitude play crucial role in the effect of self-regulated learning on school performance for students and the effect of self-regulated learning on school performance for students.

The results indicated only four statistically significant differences out of six. That is, the mean differences for those with high and low achiever were statistically significant for the academic self-efficacy, self regulation, intrinsic value, and time management attitude of self regulated learning. In each case, the group which reported high achiever had significantly better academic self-efficacy, self-regulation, intrinsic value, and time management attitude self-regulated learning than those who reported low achiever. The high-achieving group significantly differed from the low-achieving group in the mean of SRL.

Recommendations

All concerned bodies surrounding adolescents (i.e., parents, teachers, educators, GO, and NGOs) want to seek ways to enhance SRL and school performance. The school

can encourage students to enhance their self-regulated learning strategies in their school performance. Parents should support their children and be good role models in promoting self-regulation, intrinsic value and self-efficacy behavior of their children and students school performance. Higher achiever students should help low achiever students to improve their school performance and use their self-regulated learning strategies. Other studies require to be conducted in Ethiopia to enhance self-regulated learning and school performance of students. Future researches are recommended to be conducted on other construct variables, like psychological adjustment and school environment in relation to their effect of SRL on school performance. In addition, other mediator and moderate variables should be included to conduct further detail study on the area. Moreover, studying school performance effect are also other recommendations to be researched across different school level and considering different demographic characteristics. For instance, conducting researches on school performance of adolescents in all age groups and gender differences are also recommended to investigate the possible foundations and development of the variable. Schools should also develop different programs (volunteer service clubs, practical youth centers and excellent student sharing knowledge center) on helping adolescents to interact more in SRL activities and to enhance school performance.

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Appendix

Self-Regulation

1. I ask myself questions to make sure I know the material I have been studying.

2. When work is hard, I either give up or study only the easy parts (r).

3. I work on practice exercises and answer end of chapter questions, even when I don't have to.

4. Even when study materials are dull and uninteresting, I keep working until I finish.

5. Before I begin studying, I think about the things I will need to do to learn.

6. I often find that I have been reading for class but do not know what it is all about (r).

7. I find that when the teacher is talking I think of other things and don't really listen to what is being said (r).

8. When I'm reading I stop once in a while and go over what I have read.

9. I work hard to get a good grade even when I don't like a

class.

Cognitive Strategies

1. When I do homework, I try to remember what the teacher said in class so I can answer the questions correctly.

2. When I study for a test, I try to put together the information from class and from the book.

3. It is hard for me to decide what the main ideas are in what I read (r).

4. When I study I put important ideas into my own words.

5. I always try to understand what the teacher is saying even if it does not make sense.

6. When I study for a test I try to remember as many facts as I can.

7. When studying, I copy my notes over to help me remember material.

8. When I am studying a topic, I try to make everything fit together.

9. When I study for a test I practice saying the important facts over and over to myself.

10. I use what I have learned from old homework assignments and the textbook to do new assignments.

11. When I read material for this class, I say the words over and over to myself to help me remember.

12. I outline the chapters in my textbook to help me study.

13. When reading, I try to connect the things I am reading about with what I already know.

Academic Self-Efficacy

1. Compared with other students in this class, I expect to do well.

2. I am certain I can understand the ideas taught in this course.

3. I expect to do very well in this class.

4. Compared with other students in this class, I think I am a good student.

5. I am sure I can do an excellent job on the problems and tasks assigned in this class.

6. I think I will receive a good grade in this class.

7. My study skills are excellent compared with others in this class.

8. Compared with other students in this class, I think I know a great deal about the subject.

9. I know that I will be able to learn the material for this class.

Intrinsic Value

1. I prefer class work that is challenging so I can learn new things.

2. It is important for me to learn what is being taught in this class.

3. I like what I am learning in this class.

4. I think I will be able to use what I learn in this class in other classes.

5. I often choose paper topics I will learn something from even if they require more work.

6. Even when I do poorly on a test, I try to learn from my mistakes.

7. I think that what I am learning in this class is useful for me to know.

8. Understanding this subject is important to me.

Test Anxiety

1. I am so nervous during a test that I cannot remember facts I have learned.

2. I have an uneasy, upset feeling when I take a test.

3. I worry a great deal about tests.

4. When I take a test I think about how poorly I am doing.

Time Management Attitude

1. I do make study schedules.

2. I always get assignments done on time.

3. I prepare a daily or weekly "to do" list.

4. I keep up-to-date on my reading and homework assignments; as well as planning my practice time for another day.

5. I am spending enough time on academic matters.

6. I periodically re-assess my activities in relation to my goals.

7. I am satisfied with the way I use my time.

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