What Makes a Good Student?
How Self-regulation, Self-efficacy, Study Skills, Need for Achievement, and Procrastination Influence GPA

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INTRODUCTION

Managing one's own learning becomes increasingly important as students move through the educational system, taking on particular importance in college[1]. To be successful, students must not only have the capacity for learning, but engage in particular behaviors to help them learn. As part of a larger study using a study skills intervention, the present study investigated possible predictors of academic achievement including self-regulated study behaviors, academic self-efficacy, study skills, need for achievement, and procrastination.

Self-Regulated Learning

Learners do best when they assess and manage their own learning[1], however, students vary widely in their ability to engage in this self-regulation. To succeed in self-regulated learning students need to create for themselves environment that will support learning and manage their own behavior in that environment. Students also need to seek out information and develop ways of studying that work for them. Finally, they need to avoid maladaptive behavior, such as studying at the last minute. If they are able to engage in self-regulated learning they should have greater belief in their abilities and do well.

Academic Self-Efficacy

Believing that one has the ability to do well in school, also known as academic self-efficacy, has been shown by a number of researchers to be vitally important to academic performance.[2,3,4] Students who feel like they manage their own learning well should have confidence in their ability to do well.

Study Skills

Regardless of intellectual ability, for the most part, students who employ good study skills are more likely to succeed in academics.[3,5]

In the present study we assessed motivation, study methods, exam techniques, and lack of distraction.

Motivation: Having the drive or inspiration to begin and continue toward a goal

Study Methods: Using specific techniques to organize study time and utilize learning materials.

Exam Techniques: Using helpful techniques to take tests and feeling confident about one's ability to take tests.

Lack of distraction: Not being distracted by outside issues, such as money, social events, or physical or mental health issues.

Need for Achievement

People differ in their motivation toward achievement. Those high in need for achievement tend to push themselves to do well, improve on past performance, and attain a high standard. Because of this tendency, students high in need for achievement might also show high academic achievement.[6]

Procrastination

Students who put off completing work are less likely to spend the time and energy they need to do well. Procrastination has been show to correlate with lower GPA.[7,8]

Hypotheses

The more students use self-regulation strategies in studying the greater their study skills self-efficacy.

Study skills, self-efficacy, procrastination, self-regulation strategy use, and need for achievement will predict GPA.

METHOD

Participants

Forty-nine participants participated in this study, 28% men and 72% women. Participants ranged in age from 18 to 22, $M = 19.82$.

Majors included accounting (3), athletic training/exercise science (1), biology (7), business or economics (4), education (5), mathematics and actuarial science (6), nursing (10), psychology (9), public relations (1), religion or youth ministry (2), social work (5), sociology or criminal justice (1), Spanish (3), theater (1).

Materials

The Self-Regulation Strategy Inventory (SRSI)[9] measured the participants' use of specific self-regulation strategies on a 28 question assessment including three factors: managing environment and behavior, seeking and learning information, and maladaptive regulatory behavior. Participants answered on a 7-point scale ranging from 1 (never) to 7 (always) with higher scores on the total scale indicating higher use of adaptive self-regulation strategies.

Managing environment and behavior involved 12 questions such as, "I make sure no one disturbs me when I study."

Seeking and learning information involved 8 questions such as, "I ask my teacher question when I do not understand something."

Maladaptive regulatory behavior involved 8 questions such as "I try to forget about topics I have trouble learning." *(reverse scored)*

The Study Skills Self-Efficacy Scale[10] was used to assess academic self-efficacy. Students rate how much confidence they have in their study routines, their ability to read texts critically and use resources. For example, students respond on a 1 (very little) to 5 (quite a lot) scale "How much confidence do you have in doing these behaviors…maintaining a daily schedule of study hours."

The Student Attitude Inventory[11] measured study skills by assessing the participants' motivation, study methods, exam techniques, and level of distraction in a 47 question assessment. Level of distraction was not used. Participants answered on a (1, strongly disagree to 4, strongly agree) scale with higher scores indicating greater use of that study skill.

Motivation assessment involved 14 questions such as, "It is most unusual for me to be late handing in work."

Exam techniques assessment involved 9 questions such as, "I certainly want to pass the next set of exams, but it doesn't matter much if I only just scrape through." *(reverse scored)*

Study methods assessment involved 14 questions such as, "I usually plan my week's work in advance, either on paper or in my head."

Lack of distraction assessment included 10 questions such as, "Money worries distract me from my work"

A total study skills score was found by summing all of the subscales.

Need for Achievement[6] was assessed with the Needs Assessment Questionnaire. The 20 item measure assesses four different needs, only the need for achievement subscale was used in the analyses for the present study. Students respond to questions such as "I try to perform my best at work" on a 1 (strongly disagree) to 5 (strongly agree). Higher scores indicate greater need for achievement.

The **Procrastination** Scale[12] is a 20-item scale asking participants to respond to statements such as "I usually have to rush to complete a task on time" on a 1 (extremely uncharacteristic of me) to 5 (extremely characteristic) scale.

RESULTS

To test the hypothesis that the more that students use self-regulation strategies in studying the greater their study skills self-efficacy, a Pearson product-moment correlation as run. A significant correlation was found between self-regulation and self-efficacy, $r(49) = .62, p < .001$.

To test the hypothesis that self-regulation study skills, self-efficacy, study skills, need for achievement and procrastination would predict GPA a hierarchical multiple regression was run predicting GPA from the other variables. Together, the variables predicted a significant amount of the variance in GPA, $R^2 = .30, F(5, 36) = 3.12, p = .019$. However, it was only study skills that contributed significantly to the model.

The part correlations shown in Table 1 show the part of the correlation between the variable and GPA, not related to the other variables. Examining these correlations it is clear that both self-regulation and self-efficacy predict very little of GPA when the other variables are included, perhaps because they are very highly correlated with one another and with study skills.

Table 1. Hierarchical multiple regression predicting GPA from self-regulation, self-efficacy, study skills, need for achievement and procrastination

	B	SE (B)	β	t	p	Part correlation
Self-regulation study skills	.004	.005	.17	0.68	.50	.095
Self-efficacy	.003	.006	.09	0.47	.64	.066
Study skills	.018	.008	.44	2.42	.02	.337
Need for achievement	-.09	.122	-.12	-0.73	.47	-.101
Procrastination	.004	.006	.13	0.76	.45	.106

B = unstandardized beta coefficient, SE (B) = standard error, β = standardized beta coefficient

Additional Analyses

Bivariate correlations amongst the variables were high, and, along with the part correlations provided above, suggest an issue with multicollinearity. Academic self-efficacy and self-regulation study skills may be better understood and analyzed as single constructs within this realm.

Despite their lack of contribution to predicting GPA in the regression analysis, self-regulation and self-efficacy were, on their own, correlated significantly with GPA.

Table 2. Bivariate correlations of GPA, self-regulation, self-efficacy, study skills, and need for achievement.

	GPA	Self-regulation	Self-efficacy	Study skills	Need for achievement
Self-regulation	.39**				
Self-efficacy	.34*	.62***			
Study skills	.51***	.63***	.52***		
Need for achievement	.10	.49***	.43**	.33*	
Procrastination	-.06	-.54***	-.22	-.24	-.40**

Note: *$p < .05$, **$p < .01$, ***$p < .001$

CONCLUSIONS

As expected, students who used more self-regulation strategies in studying felt more confident in their ability to study. Because this was a correlational study, it is difficult to know if self-regulation strategies are improving self-efficacy, if self-efficacy is leading to self-regulation strategy use or if a third variable is influencing both. More research is needed to look at the potential causal relationship between self-regulation strategies and self-efficacy.

The hypothesis that self-regulation, self-efficacy, study skills, need for achievement, and procrastination would predict academic achievement was supported. However, looking more deeply into the findings, it seems that study skills is the only significant predictor of GPA. This suggests that students should place more emphasis on study skills when striving for academic achievement, while not completely disregarding the other factors. Exploratory analyses revealed that self-regulation and self-efficacy were significantly correlated with GPA.

Given the potential issue of collinearity among the variables, particularly self-regulation study skills, self-efficacy, and study skills, in future research it may not be necessary or helpful to assess all three variables.

Limitations

As with all self-report measures, the scales used in this study relied on participants to be honest in their responses and to think about the questions in similar ways. The questions were subjective and what constitutes a score of '5' for one person may constitute a '3' for someone else.

With a sample size of 49 students, the power to see potential relationships amongst the variables was lower. When the study is run again with more participants, more statistically significant results would be expected.

Implications

The findings of this study suggest that one of the best things students can do to improve their academic performance is learn study skills!

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