INTRODUCTION
Managing one’s own learning becomes increasingly important as students move through the educational system, taking on particular importance in college. 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 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 learning1, 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 vital important to academic performance.2,3 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 methods are more likely to succeed in academics.4,5 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 test feelings and confidence 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 of achievement, or the need for achievement, are certain they want to pass the next set of exams, but it doesn’t matter if they are learning anything. Those lower in need of achievement, or the need for achievement, are not as concerned with learning, but are focused on simply passing the next set of exams.

Procrastination
Students who put off completing work are less likely to spend the time and energy they need to do well. Procrastination has been shown to correlate with lower GPA.6,7

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 was 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, R² = .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 GPA of 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.

<table>
<thead>
<tr>
<th>N</th>
<th>.50</th>
<th>30%</th>
<th>0.63***</th>
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<td>Self-regulation study skills</td>
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<td>.17</td>
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<td>.003</td>
<td>.006</td>
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<td>.004</td>
<td>.006</td>
<td>.13</td>
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B = unstandardized beta coefficient, SE (B) = standard error, F = 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.

<table>
<thead>
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<td>-.54**</td>
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Note: p < .05, **p < .01, ***p < .001

CONCLUSIONS
As expected, students who used more self-regulation strategies in studying showed more confidence in their ability to study. Because this was a correlational study, it is difficult to know if self-regulation strategies are an important ingredient for academic achievement or if a 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 it may be that environment, or studying 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 amongst 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 may vary. 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, 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!

References