

# What Do Students Know? Knowledge of Effective Studying Strategies, Academic Achievement, & Self-Efficacy

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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.<sup>1</sup> To be successful, students must not only have the capacity for learning, but also engage in particular behaviors to help them learn. The present study investigated students' knowledge of effective study strategies and whether such knowledge has a relationship with academic achievement, academic self-efficacy, and procrastination.

Previous research on study strategies has show the following to be most effective:

<b>Scheduling</b>	Setting a monthly schedule is more effective than a daily or weekly schedule <sup>2</sup> Segmenting large assignments and assigning due dates is useful for accomplishing assignments and doing well <sup>3</sup>
<b>Reading</b>	Understanding organization of reading prior to reading is helpful Re-reading is not an effective studying strategy <sup>4</sup>
<b>Self-Testing</b>	Using one large group of flashcards rather than smaller stacks is more effective <sup>5</sup> Stopping while reading to test oneself is an effective study strategy <sup>3</sup>
<b>Making Connections</b>	Connecting previously learned information to new concepts helps memory retention
<b>Highlighting</b>	Highlighting key terms/phrases, but not entire sections of reading, is effective in remembering <sup>6</sup>
<b>Note Taking</b>	Summarizing while taking notes is more effective than taking notes verbatim
<b>Studying</b>	Spaced studying is more effective than cramming <sup>4</sup>
<b>Mnemonics</b>	Using mnemonics for lists is more effective than using mnemonics for complicated concepts <sup>7</sup>

### Judgements of Effective Study Strategies

Susser and McCabe (2013)<sup>4</sup> conducted a study exploring students' academic success and their awareness of the effectiveness of spaced studying. The majority of the participants were aware that research supports the advantage of spacing over massing for long-term retention; however, students reported they did not always use these strategies. The current study expands on this study by investigating a larger array of research-supported study strategies. Students that are more knowledgeable of these study strategies are expected to have greater academic success.

### Academic Self-Efficacy

Academic self-efficacy refers to a student's belief that he or she has the ability to do well in school and is associated with student's overall academic self-regulation.<sup>8</sup> Academic self-efficacy has been shown to be vitally important to academic performance.<sup>9, 10, 11</sup> Students who are more confident in their ability to accomplish academic tasks will perform better. Metacognitive self-regulation, or the awareness of one's own use of self-regulating strategies, is associated with a higher utilization of effective study skills,<sup>6</sup> so students in the present study with greater knowledge of study skills are expected to have greater academic self-efficacy.

### Procrastination

Procrastination, or putting off necessary tasks until later, can be a self-defeating behavior. Students who procrastinate have been shown to engage in behavior that is unhelpful to success and these students have lower assignment and exam scores<sup>12, 13</sup> and overall GPAs.<sup>14</sup>

## HYPOTHESES

Greater knowledge of effective study strategies will be associated with greater academic achievement.

Greater knowledge of effective study strategies will be associated with higher academic self-efficacy.

Greater knowledge of effective study strategies will be associated with less procrastination.

### Research Question

Would students rate the more effective study strategies, according to research, as more effective?

## METHOD

### Participants

A total of 84 students participated in this study, 24% men and 76% women. Participants ranged in age from 18 to 23 ( $M = 18.98$ ), and included 24 first year students, 38 sophomores, 14 juniors, and 8 seniors.

### Materials

**Knowledge of Effective Study Strategies Scale (KESSS)** was used to assess student's knowledge of effective study strategies on a 28-question assessment. The scale asked students to rate effective and ineffective study strategies on a scale from 0 (less effective) to 10 (more effective) with a higher total score indicating more knowledge of effective study skills. The scale was developed for this study and was inspired by Susser and McCabe's<sup>4</sup> study on students' academic success and their awareness of spaced studying.

**The Study Skills Self-Efficacy Scale<sup>15</sup>** was used to assess academic self-efficacy. Students rate how much confidence they have in their studying techniques. For example, students respond on a 1 (very little) to 5 (quite a lot) scale to questions such as "How much confidence do you have in doing these behaviors...maintaining a daily schedule of study hours."

**Procrastination Lay's<sup>16</sup> 18 item procrastination scale** was used to measure procrastination. The scale asks respondents to report on their behavior with questions such as "I am continually saying "I'll do it tomorrow"" on a 1 (extremely uncharacteristic) to 5 (extremely characteristics) scale.

**Academic Achievement** was measured with self-reported cumulative GPA.

## RESULTS

To test the hypothesis that greater knowledge of effective study strategies would be associated with greater academic achievement, a Pearson product-moment correlation was run. An non significant correlation was found between knowledge of effective study strategies and academic achievement,  $r(83) = .05, p = .69$ .

To test the hypothesis that greater knowledge of effective study strategies would be associated with higher academic self-efficacy, a Pearson product-moment correlation was run. An non significant correlation was found between knowledge of effective study strategies and academic self-efficacy,  $r(84) = .17, p = .13$ .

To test the hypothesis that greater knowledge of effective study strategies would be associated with less procrastination, a Pearson product-moment correlation was run. An non significant correlation was found between knowledge of effective study strategies and procrastination,  $r(84) = -.09, p = .44$ .

To investigate the research question asking whether students would rate study strategies shown to be more effective in research as more effective, mean responses for each study skill were calculated, with higher scores indicating judgment of the technique as more effective.

	Study Skill (How effective is...)	M	SD
<b>Scheduling</b>	Planning monthly*	5.46	2.40
	Segmenting large assignments*	6.62	1.93
<b>Reading</b>	Understanding the organization of a reading assignment*	6.30	2.22
	Re-reading when studying for multiple choice tests	5.83	2.40
	Re-reading when studying for essay-type tests	5.71	2.32
<b>Self-Testing</b>	Using one large group of flashcards rather than several smaller stacks*	4.74	2.25
	Stopping often to test yourself*	6.21	2.17
<b>Making Connections</b>	Connecting new concepts to past learning*	7.71	1.71
<b>Highlighting</b>	Highlighting only words and phrases in a reading*	5.83	2.24
	Highlighting an entire paragraph in a reading	2.54	1.92
<b>Note Taking</b>	Summarizing material*	4.50	2.60
	Copying verbatim	5.34	2.05
<b>Studying</b>	Shorter sessions over a long period of time*	7.44	2.05
	One longer session	4.98	2.33
	In a variety of environments*	5.07	2.61
	Using outlines to organize material*	5.82	1.98
<b>Mnemonics</b>	To remember a complicated concept	6.87	2.51
	To remember a list*	7.64	2.24

## CONCLUSIONS

In this study, we expected that the knowledge of effective study strategies would be associated with greater academic achievement, higher academic self-efficacy, and less procrastination. The results did not support the hypotheses. It is possible that knowledge of effective strategies is not associated with these variables. However, given the wide range of class years and possibility levels, it may be that any connections were hard to see because of the variability among the participants.

Another purpose of this study was to investigate students' knowledge of effective study skills. Results showed that students have a moderate awareness of effective study skills. They tended to rate effective strategies, such as connecting new concepts to past learning more highly than less effective strategies, such as cramming. However, not all effective strategies received high ratings. Further research should be done to test interventions that increase student's knowledge of effective study skills as metacognitive awareness and self-regulation of these strategies have a positive impact on student performance.<sup>6</sup>

Although this study did not show a relation between knowledge of effective study skills and academic achievement, such knowledge may still be desirable for students to help them study more efficiently and have more confidence in their abilities.

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