

GRANT REPORT UPDATE

A Brief Intervention to Promote Academic Strategy Use Among Cadets at a Military College: Impact on Academic Self Efficacy and Strategy Use and Importance of Baseline Cognitive Profiles

Background

Academic behavioral strategy use is correlated with academic performance. College students are not necessarily optimizing strategy use. Interventions exist that target strategy use among populations that struggle with OTMP skills; but these interventions are often time intensive. There is a lack of interventions that are brief and flexible that seek to improve strategy use. Further, need to know whether these interventions may be more or less effective given cognitive abilities (WJ; EF questionnaires). This info can be used to tailor recommendations to students. Students needing more intensive intervention can be funneled into a more intensive course of intervention.

Method

A total of 66 college students participated in the study. Participants completed baseline assessments and surveys, which included: Academic Self-Efficacy, Strategies for Success (Frequency and Effectiveness), ADEXI, and three WJ-IV COG subtests: Verbal Attention, Numbers Reversed, and Object-Number Sequencing. Following baseline assessment, participants were selected to attend one of two seminars. Seminars were identical and centered on why and how to use planners and task lists. Each seminar lasted one hour, and were designed to be engaging presentations of the material. Participants were provided with handouts summarizing key points and techniques, and were encouraged to participate via open-ended questions and invitations to share their own experiences with planners and task lists. Daily surveys were given to participants during the two seminar weeks, so that group A completed surveys only following seminar attendance, group B completed one week of surveys prior to seminar attendance and one week of surveys following seminar attendance, and group C never attended a seminar but completed daily surveys. At the end of the seminar, participants completed a post-test for the Academic Self-Efficacy scale, as well as an evaluation of the seminar.

Results

Descriptive Summary

Of the 66 participants, 64% identified as a man and 36% identified as a woman. The sample was racially diverse, with 67% ($n = 44$) identifying as White, 12% ($n = 8$) identifying as predominantly Black/African American, 8% ($n = 5$) identifying as Asian/Asian American, and 12% ($n = 6$) identifying as multiracial. Most participants were freshmen (59%, $n = 39$), with 12 juniors (18%), 10 sophomores (15%), and 5 seniors (8%). Participants reported risk factors for academic success skills. Of the 66 participants, 12 (18%) report having an ADHD diagnosis. Of those who reported having ADHD, 50% reported receiving educational or psychological help at some point; however, only two were currently receiving help, while 3 were taking medication for ADHD symptoms. Twenty-two (33%) participants were student-athletes, and 36 (55%) planned to contract with a military branch on graduation.

For the predictor measures, the ADEXI, SFS, and Academic Self-Efficacy measures are reported as total scores. The ADEXI, with total scores able to range from 14 – 70, with higher scores representing more

difficulties with executive function, had a mean of 37.98 ($SD = 7.85$) in the current sample. The modified SFS, measuring how frequently participants used strategies, with total scores able to range from 14 – 90, with higher scores representing more frequent use of skills, had a mean of 66.94 ($SD = 12.20$) in the current sample. The SFS, measuring how well participants used strategies, with total scores able to range from 14 – 90, with higher scores indicating better used of skills, had a mean of 68.00 ($SD = 14.31$) with the current sample. Finally, the Academic Self-Efficacy measure, with total scores able to range from 11 – 77, with higher scores indicating greater self-efficacy, had a mean score of 55.02 ($SD = 11.19$) with the current sample at baseline. Following seminar attendance, the Academic Self-Efficacy post-test had a mean score of 57.05 ($SD = 5.01$; $n = 20$).

Three WJ-4 COG subtests were administered as part of the baseline measures, with raw scores reported here: Verbal Attention ($M = 23.67$, $SD = 3.06$), Numbers Reversed ($M = 16.35$, $SD = 4.19$), and Object Number Sequencing ($M = 20.91$, $SD = 4.38$). The total scores (sum of all three subtests) for participants had a mean of 60.93 ($SD = 9.48$). All participants are in the same age range for standardized scoring, and the subtests are positively correlated with each other, so the total score of the WJ subtests will be used in data analyses.

Predictive Relationships

Baseline Correlations. Academic Self-Efficacy was negatively related to the ADEXI ($r = -.57$, $p < .001$), positively related to the modified SFS ($r = .72$, $p < .001$) and original SFS ($r = .72$, $p < .001$), and not related to the WJ-IV COG scores ($r = .15$, $p = .305$). Following seminar attendance, Academic Self-Efficacy was not related to any other measure ($p > .05$).

Seminar Effectiveness and Social Validity. Following seminar attendance, participants reported slightly higher Academic Self-Efficacy, although this difference was not statistically significant. There were no differences in daily calendar or task list use across seminar groups. None of the baseline measures predicted seminar effectiveness.

Participants reported social validity via Likert-type scale evaluations of their enjoyment of the seminar, how much they learned, the likelihood they would apply what they learned, how useful the seminar was, as well as if they would recommend the seminar to others. Values could range from 1 to 5, with 1 indicating they strongly disagreed and 5 representing they strongly agreed. Overall, participants rated the seminar at an average of 4.28/5 ($SD = .47$). The highest rated aspect of the seminar was the usefulness ($M = 4.50$, $SD = .61$), followed by enjoyment ($M = 4.35$, $SD = .49$), whether they would recommend the seminar ($M = 4.30$, $SD = .66$), if they planned to apply what they learned ($M = 4.20$, $SD = .83$), and finally how much they learned ($M = 4.05$, $SD = .76$).

Conclusion

The results of this study suggest that Academic Self-Efficacy is related to self-report measures of executive function and academic skill use; however, self-report of executive function was not related to direct measures of cognitive abilities as measured by select WJ-IV COG subtests. Consistent with expectations, greater struggles with executive functioning (as measured by the ADEXI) were associated with lower academic self-efficacy, lower self-reported frequency of behavioral strategy use, and lower self-reported behavioral strategy proficiency. Further, baseline measures of academic skill use and

executive function did not predict skill use following a seminar on planning and task list use. Academic Self-Efficacy pre- and post-test scores were positively correlated, with scores slightly improving following seminar attendance. Daily calendar and task list use did not change pre- and post-seminar attendance. These findings support that academic self-efficacy is an important predictor of functioning and skill use; however, data do not support the effectiveness of the single-session seminar. Participants reported overall satisfaction with the seminar; however, attendance was low and completion rates of the daily surveys were low. It is possible additional relationships may have been observed with higher attendance and survey completion rates.

Budget Update

Expenditures include add pay for the PI and co-PI (\$2,100.00), salary and fringe benefits for two graduate assistants (\$1,907.60), supplies, primarily consisting of protocols and response booklets, lock bags for physical copies of data, (\$1,671.31), and participant reimbursement (\$2,230.00), for total expenditures of \$7,908.91.

Presentations and Publications

Dawes, J., Eddy, L., & Sommerfield, L. (March 2024). *Academic Self-Efficacy as a Predictor of Executive Function and Strategy Use*. Paper submitted to the annual meeting of the Southeastern Psychological Association. Orlando, Florida.