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ABSTRACT

Positive relationships between student study behaviors and academic achievement were examined in this extension of a large-scale Far West Laboratory project. Participants were 196 college students drawn from 28 sections of an introductory psychology course over a 4-semester period, involving 12 instructors. Subjects' activities and allocation of study time in preparing for a recent test were assessed using the Study Activity Survey (SAS), Form T. Self-efficacy was assessed with an abbreviated form of the Self-Concept of Academic Ability Test (SCAAT). The Concept Mastery Test measured academic aptitude, and the Adult Nowicki-Strickland Internal External Control Scale determined locus of control. The 37-item Everyday Memory Questionnaire (EMQ) determined subjects' views of their own memories on a 5-point scale. Scores on the SCAAT, the Self-Evaluation of Cognitive Ability subscale of the SAS, the EMQ, and the Concept Mastery Test all accounted for significant shares of achievement variance, with SCAAT scores being the best single predictor of students' course achievement. The more positive the student's self-concept of academic ability, the more positive the student's evaluation of cognitive ability, the more negative the student's self-assessment of memory, and the higher the student scored on the Concept Mastery Test, the better the student did in the course. Two tables present study data. (SLD)

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Self-Concept of Academic Ability, Self-Assessment of Memory Ability, Academic Aptitude, and Study Activities as Predictors of College Course Achievement

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Objectives and Perspectives

This research was designed to examine possible relationships between student study behaviors and academic achievement and represents an extension of a large-scale project begun by John Thomas and his colleagues at the Far West Laboratory (e.g., Thomas, Iventosch, & Rohwer, 1987). In one study, Thomas et al. (1987) examined the relationship between study processes, self-efficacy, and academic achievement in specific courses, with self-efficacy defined as the extent to which students believe that they can control the outcomes of their attempts at learning. They found that the best single predictor of achievement in a course for junior high, senior high, and college students was a measure of self-efficacy, with a measure of academic aptitude and a very limited number of indices of study behavior accounting for much smaller but significant shares of the achievement variance.

In a study in which a measure of locus of control and a self-assessment measure of memory were also included as possible predictors of college course achievement, Wilhite (1990) found a different pattern of results. He found that scores on the self-assessment measure of memory ability were the best predictors of final course grades, followed by scores on the locus of control measure and on the Self-Concept of Academic Ability Test (SCAAT), used by Thomas and his associates as the measure of self-efficacy. Of the 14 subscales from the Study Activity Survey (SAS), Form R, developed by the Autonomous Learning Project (e.g., Christopoulos, Rohwer, & Thomas, 1987) to assess routine study activities employed in a specific course, only the cognitive scale of Focus on Test Relevance and the two self-management scales of Assiduous Resource Management and Means of Resource Management were significant predictors of course achievement. In contrast, Thomas et al. (1987) found only the cognitive subscale of Duplicative Processing to be a significant predictor of course achievement in their college sample.

As a prelude to pursuing possible reasons for this different pattern of findings, the present study attempted to replicate the findings of Wilhite (1990) using Form T of the SAS with a similar sample of college students. Form T is designed to assess the study activities in which students engage as they prepare for a test in a specific course. Thomas et al. (1987) reported in their study, in which subjects completed both Forms R and T of the SAS, that none of the Form T SAS subscales were significant predictors of college course achievement.

Method

Subjects. A total of 196 college students enrolled in an introductory psychology course participated as part of a course requirement. The subjects were drawn from 28 different sections of the course over a four-semester period, involving 12 different instructors.

Materials and Procedure. Subjects participated in the one-hour session in groups ranging in size from three to 35 during weeks 9-11 of a 13-week academic semester. First, subjects' study activities in preparing for the most recent test in their introductory psychology course were assessed using the Study Activity

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Survey (SAS), Form T, developed by the Autonomous Learning Project (e.g., Christopoulos, Rohwer, & Thomas, 1987). The 93 study activity items from the instrument have been classified into 12 subscales, nine of which concern cognitive activities and three of which concern self-management activities. These scales are listed in Table 1. An additional 22 items of the survey assessed students' allocation of study time on a routine basis. Self-efficacy was then assessed using the abbreviated form of the Self-Concept of Academic Ability Test (SCAAT) used by Thomas et al. (1987), with higher scores indicating a more negative self-concept. The Concept Mastery Test was then administered as a measure of academic aptitude, followed by the Adult Nowicki-Strickland Internal-External Control Scale, with higher scores indicating a more external locus of control. The final measure completed by the subjects was the Everyday Memory Questionnaire (EMQ, Martin, 1983), a 37-item measure that asks respondents to rate on a 5-point scale their memory for information and events ranging from the "gist of what someone said" to "zip codes".

Results

Table 1 shows the correlations between the variables measured in the study. A stepwise multiple regression analysis was performed to predict course achievement, as reflected in students' final semester grades for the introductory psychology course. Entered into the analysis as possible predictor variables were the scores on the 12 activity subscales from the SAS listed in Table 1, and the scores on the SCAAT, the Concept Mastery Test, the locus of control measure, and the EMQ. One additional variable included in the analysis as a possible predictor was an estimate of Total Study Time. Subjects' responses to seven questions concerning how much time was devoted to studying for the most recent test in the course over the seven days preceding the test were used as the basis for arriving at a total study time estimate.

The results from this regression analysis are shown in Table 2. Scores on the SCAAT, the Self-Evaluation of Cognitive Ability subscale of the SAS, the EMQ, and the Concept Mastery Test all accounted for significant shares of the achievement variance, with scores on the SCAAT the best single predictor of course achievement. The more positive the student's self-concept of academic ability (higher scores on the SCAAT indicate a more negative self-concept), the more positive the student's evaluation of his/her cognitive ability, the more negative the student's assessment of his/her memory ability, and the higher the student scored on the Concept Mastery Test, the better the student tended to do in the course.

Implications and Conclusions

The results of this study are more consistent with those reported by Thomas et al. (1987) than they are with those reported by Wilhite (1990), even though the sample of subjects used in the present study was drawn from the same course in the same university as that employed by Wilhite (1990). Particularly noteworthy is the finding in the present study that scores on the self-assessment measure of memory were found to be significantly negatively related to course grade. Wilhite (1990), in finding self-assessment of memory to be the best single predictor of course grade, found the relationship between self-assessment of memory and course grade to be positive. Also of note is the finding in this study that scores on the Concept Mastery Test were significantly positively related to course grade, as they were in the Thomas et al. (1987) study, whereas this relationship did not emerge in Wilhite's (1990) study. In addition,

Wilhite (1990) found locus of control to be a predictor of course achievement independent of the contribution of the SCAAT measure, but the present study did not.

Although the students employed as subjects in this study were drawn from the same university course population as that used by Wilhite (1990), only about half of the subjects were taught by the same instructors as those involved in Wilhite's (1990) study. Thus, the different pattern of results found in this study might be attributable in part to different characteristics of the courses in the two studies. However, differences in the combinations of characteristics exhibited by the students in the two samples may also have played a role in the different pattern of results found in the two studies. For example, Wilhite (1990) found scores on the Everyday Memory Questionnaire to be significantly positively correlated with scores on the Concept Mastery Test and scores on the locus of control measure. The better subjects assessed their memory to be, the better they tended to score on the Concept Mastery Test and the more external in locus of control they tended to be. In the present study, there was no significant relationship found between scores on the EMQ and scores on the Concept Mastery Test, and the significant relationship found between scores on the EMQ and the locus of control measure was the reverse of that reported by Wilhite (1990): the more positively subjects assessed their memory in this study, the more internal in locus of control they tended to be. In addition, the present study found a significant relationship between scores on the EMQ and scores on the SCAAT, with a more positive academic self-concept associated with a more positive self-assessment of memory ability. No such relationship emerged in Wilhite's (1990) study. Therefore, the different pattern of findings in this study and that of Wilhite (1990) may reflect differences in the combinations of characteristics exhibited by the students in the two samples. In all of these cases, the different relationships among characteristics emerged despite the fact that the distributions of scores on each variable in the two studies were remarkably similar. These differences in combinations of characteristics, combined with the finding that scores on the EMQ were related to course grade in opposite ways in the two studies, raise the possibility that subjects in the two studies may have differed in the accuracy with which they assessed their memory ability. Herrmann (1984) has noted that findings of only weak to moderate validity for memory questionnaires may be due more to inadequate self-knowledge than they are to poorly designed questionnaires.

In light of these different relationships among student characteristics in the two studies, it would be of interest in future studies to examine the possible mediating role that course characteristics play on the relationships among student characteristics. Although most of the student characteristics assessed in these studies would normally be assumed to be relatively stable over time, it is possible that some of the measures, such as the memory questionnaire, could be influenced rather significantly by experience in a specific course. This might especially be the case in a situation in which students are completing the measures designed to assess student characteristics in the context of a test session that is devoted primarily to answering questions about studying for a specific course in which they are enrolled. In turn, course characteristics might mediate in important ways the relationships between student characteristics and course achievement and between study behaviors and course achievement (e.g., Wilson, Bol, & Warkentin, 1991, April). Lefcourt (1982), for example, has suggested that inconsistent findings regarding the relationship between locus of control and academic achievement point to the need for studies of how characteristics of the academic context may mediate the relationship between locus of control and achievement.

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Table 1
Correlations between Variables

	UP	FTR	SN	DUP	GVI	GII	GCI	CM	SECA	ARM	MRM	SEMA	CMT	SCAAT	EMQ	LC	TIME	GRADE
CMT	-.04	-.05	.02	-.25**	-.21**	-.15*	-.18**	-.04	.13	-.07	-.25**	.10	-	-.31**	.05	-.07	-.07	.30**
SCAAT	-.06	-.13*	-.03	.13*	.09	.15*	.09	-.04	-.33**	-.04	.18**	-.31**	-.31**	-	-.16**	.26**	.09	-.49**
EMQ	.10	.15*	.08	.05	.19**	.13*	.07	.18**	.17**	.02	.12	.18**	.05	-.16**	-	-.26**	-.01	-.09
LC	-.02	-.05	.04	.07	.03	.10	-.02	-.09	-.16**	.06	.03	-.17**	-.07	.26**	-.26**	-	.04	-.06
TIME	.19**	.07	.18**	.33**	.21**	.11	.27**	.17**	.09	.14*	.28**	.17**	-.07	.09	-.01	.04	-	-.01
GRADE	.03	.02	.01	-.11	-.02	-.08	-.09	.04	.32**	.04	-.20**	.21**	.30**	-.49**	-.09	-.06	-.01	-

*p < .05 **p < .01

Abbreviations:

Study Activity Survey Subscales:

UP - Uniform Processing
FTR - Focus on Test Relevance
SN - Selective Notetaking
DUP - Duplicative Processing
GVI - Generation of Verbatim Information
GII - Generation of Interpreted Information
GCI - Generation of Constructed Information
CM - Cognitive Monitoring
SECA - Self-Evaluation of Cognitive Ability
ARM - Assiduous Resource Management
MRM - Means of Resource Management
SEMA - Self-Evaluation of Management Ability

CMT - Concept Mastery Test
SCAAT - Self-Concept of Academic Ability Test
EMQ - Everyday Memory Questionnaire
LC - Locus of Control Measure
TIME - Estimate of Study Time Spent Studying for Test
GRADE - Introductory Psychology Course Grade

Table 2

Stepwise Multiple Regression: Student Characteristics and SAS Subscales on Course Grade

Variable	R	B	Standard error of B	β	p
SCAAT	.530	-.135	.019	-.452	<.0001
SECA	.557	.050	.016	.194	<.0022
EMQ	.579	-.010	.004	-.162	.0070
CMT	.590	.018	.009	.124	.0460