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Correlations Between The Academic Motivations Inventory and the Survey of Study Habits and Attitudes

Joan B. Garfield

and

John L. Romano

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As part of the evaluation of the 1979-80 Pilot Educational Packages (PEP) in General College, students in PEP as well as students in a section of GC 1281 (Introductory Psychology) were asked to complete the Brown-Holtzman Survey of Study Habits and Attitudes (SSHA). All students who attended freshman orientation prior to the start of Fall 1979 completed the Academic Motivations Inventory (AMI). A total of 66 students completed both the SSHA and AMI. Since both instruments measure to an extent student motivations and attitudes toward school, this study was undertaken to determine the degree of relationship between them.

Description of Instruments

The Academic Motivations Inventory (AMI). The AMI was developed in the mid 1970's to measure student motivations toward the academic environment. The AMI consists of 90 simple, declarative sentences accompanied by a five-point scale ranging from "Not at all True" to "Extremely True." Students can complete the inventory in from 10 to 20 minutes. The 19 scales of the AMI are:

Scale 1: Thinking Motives. Enjoying schoolwork, thinking, etc.

Scale 2: Achieving Motives. Desiring to work hard and do ones best.

Scale 3: Persisting Motives. Tending to keep working at something until it is completed.

Scale 4: Competing Motives. Desiring to do better than other students.

Scale 5: Influencing Motives. Enjoying arguing with others or being a leader.

Scale 6: Facilitating Anxiety. Pressure or anxiety is enjoyable and/or helps the person do better work.

Scale 7: Grades Orientation. Desiring good grades.

Scale 8: Economic Orientation. Focusing on the career preparation aspect of school.

Scale 9: Desire for Self-Improvement. Emphasizing improvement of self-understanding, knowledge, and general competence through school.

Scale 10: Demanding. Refusing to passively accept disliked instructional practices.

Scale 11: Affiliating Motives. Enjoying being with other people in school.

Scale 12: Withdrawing Motives. Preferring to work alone; finding group projects or class discussions unprofitable or unpleasant.

Scale 13: Approval Motives. Identifying the desire to be thought well of as an explicit reason for learning or doing well in school.

Scale 14: Debilitating Anxiety. Pressure, anxiety, or the possibility of failure are painful and interfere with doing good work.

Scale 15: Dislike School. Disliking schoolwork, lacking interest, preferring other activities.

Scale 16: Discouraged about School. Feeling like school is too hard or that it doesn't do any good to study.

Scale 17: Male Continuance. A scale correlating with males continuing in school.

Scale 18: Female Continuance. A scale correlating with females continuing in school.

Scale 19: Male G.P.A. A scale correlating with male grade point average.

The Survey of Study Habits and Attitudes (SSHA). The SSHA, developed in the early 1950's, measures study methods, motivation for studying, and attitudes toward scholastic activities which are important in the classroom. Research has shown that SSHA is a useful predictor of academic achievement. Students can complete the SSHA in from 25 to 40 minutes by answering 100 statements about study habits and attitudes on a five-point scale from "rarely" to "always." The four scales of the SSHA are:

(DA) Delay Avoidance: Promptness in completing academic assignments, lack of procrastination, and freedom from wasteful delay and distraction.

(WM) Work Methods: Use of effective study procedures, efficiency in doing academic assignments, and how-to-study skills.

(TA) Teacher Approval: Opinions of teachers and their classroom behavior and methods.

(EA) Education Acceptance: Approval of educational objectives, practices, and requirements.

Results

Separate intercorrelation matrices were computed for the scales of the AMI (Table 1) and SSHA (Table 2). Pearson Product correlations between the scales of the AMI and SSHA were also analyzed (Table 3). The AMI scales showed low, positive intercorrelations, most significant at the .05 level or better. The SSHA scales showed high, positive intercorrelations, all significant at the .05 level. The correlations between the AMI and SSHA scales ranged from -.48 to .37, with an average absolute value of .15. Of the 76 possible correlations, 3 were significant at the .05 level and 10 at the .01 level. Separate multiple regressions of the AMI scales on the 4 SSHA scales yielded multiple correlations ranging from .57 to .73 (Table 4).

A canonical analysis was used to determine how much the two sets of scales were correlated. Canonical analysis seeks a linear combination of each set of variables that has the highest correlation with each other. The first two canonical variates for the AMI and SSHA scales yielded a correlation coefficient of .79 (R^2=.62, p=.001). Successive combinations of each variable set yielded canonical variates which did not have correlations significantly different from zero. Therefore, there seems to be only one way of significantly predicting SSHA scores from AMI scores; they seem to have one main factor in common.

Looking at the correlations of variables in each measure with its own canonical variate we can try to interpret the nature of the common factor (Table 5,6). For the AMI the largest positive weights are for the scales "Grades Orientation," "Withdrawing Motives," "Debilitating Anxiety," "Dislike School," "Discouraged about School". The largest negative weights are for "Female Continuance" and "Male G.P.A." For the SSHA, all four scales have negative weights, the largest being for "Education Acceptance" and "Delay Avoidance." A possible interpretation might be that the common factor for both measures is composed of negative motivations, anxieties,

and habits that affect academic performance.

The canonical variate extracts 40 percent of the variance from the four scales of the SSHA. Of this variance, 62% is accounted for by AMI scales. Although this amount is not very large (25%), it may account for most of the variance in common between the SSHA and the major dependent variables of interest in the PEP evaluation (Fall Quarter credit completion ratio, grade point average, and winter registration). To test this hypothesis, multiple correlation coefficients between the SSHA scales and the three dependent variables were compared to multiple correlations between the AMI scales and the same three dependent variables (Table 7). In all cases the multiple R's were larger for the AMI scales.

Conclusions

Although this study showed few correlations between the SSHA and AMI individual scales, suggesting little relationship between the individual scales of the two instruments, a linear combination of AMI scales predicted more than 30% of the variance of each SSHA scale (Table 4).

The "Education Acceptance" scale of the SSHA correlates significantly with 7 of 19 AMI scales and the "Teacher Approval" scale of the SSHA correlates significantly with 5 of 19 AMI scales. The "Dislike School" scale of the AMI correlates negatively with 3 of the 4 SSHA scales. Finally, the multiple correlations between the AMI scales and the three dependent measures of interest were higher than the multiple correlations between the SSHA scales and the same dependent measures. This finding suggests that the AMI scales may predict those dependent measures more accurately than the SSHA.

These results should be interpreted very cautiously due to the small sample size (66 students) and the dependent variables based only on Fall Quarter academic achievement. In addition, the PEP students have generally weaker academic achievement histories compared to the GC 1281 students who would more closely represent the typical GC student in prior academic achievement.

Table 1

Intercorrelations Between the 19 Scales of the AMI (N=126 to 140)[a]

5	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
1																		
2	.50**																	
3	.27**	.41**																
4	.38**	.27**	.24**															
5	.54**	.40**	.24**	.55**														
6	.36**	.26**	.05	.33**	.41**													
7	.40**	.58**	.41**	.40**	.36**	.13												
8	.31**	.36**	.23**	.38**	.34**	.15*	.53**											
9	.43**	.35**	.25**	.24**	.32**	.15*	.51**	.43**										
10	.35**	.27**	.28**	.38**	.35**	.22**	.32**	.20**	.28**									
11	.43**	.42**	.27**	.39**	.39**	.31**	.52**	.46**	.54**	.29**								
12	.06	-.06	.03	.40**	-.04	.30**	.21**	.18*	.10	.26**	.18*							
13	.42**	.36**	.35**	.52**	.43**	.40**	.59**	.49**	.57**	.38**	.54**	.38**						
14	.21**	.19*	.17*	.50**	.22**	.14*	.52**	.24**	.37**	.42**	.39**	.48**	.45**					
15	.15*	-.15*	-.16*	.27**	.23**	.30**	.10	.19*	.13	.31**	.29**	.41**	.27**	.36**				
16	.19*	.0	-.10	.44**	.26**	.34**	.21**	.28**	.27**	.34**	.32**	.57**	.43**	.56**	.56**			
17	.42**	.41**	.32**	.47**	.49**	.24**	.67**	.40**	.40**	.26**	.54**	.20*	.70**	.50**	.02	.27**		
18	.04	.13	.21**	-.06	.08	-.12	.15*	.07	.30**	.07	.05	-.43**	.10	-.10	-.39**	.40**	.23**	
19	-.02	.17*	.17*	-.38**	-.08	-.32**	-.14	-.29**	-.17*	-29**	-.26**	-.56**	-.36**	-.53**	-.73**	-.75**	-.16*	.35**

* $p \leq .05$ ** $p \leq .01$

[a] On each scale the N varies from 126 to 146 students who completed enough items to receive a score for an individual scale.

Table 2

Intercorrelations of the SSHA Scales (N=108)

	DA	WM	TA	EA
DA				
WM	.75**			
TA	.45**	.47**		
EA	.65**	.67**	.75**	

** $p \leq .01$

Table 3

Correlations Between SSHA Scales With AMI Scales (N=66)

	SSHA Scales			
AMI Scales	DA	WM	TA	EA
1	.06	.08	.02	.05
2	.14	.07	.17	.16
3	.16	.11	.05	.25*
4	.19	.18	-.19	.07
5	.07	.15	-.14	.09
6	-.03	.16	-.09	-.05
7	-.18	-.13	-.20	-.18
8	-.001	-.03	-.23	-.09
9	.01	.06	-.08	-.04
10	.09	.14	-.27	-.10
11	.02	-.05	-.10	-.11
12	-.17	-.05	-.30**	-.34**
13	.02	.14	-.13	-.03
14	.02	-.13	-.32**	-.34**
15	-.24*	-.06	-.42**	-.48**
16	-.14	-.07	-.34**	-.40**
17	.18	.11	-.01	.09
18	.14	.11	.20	.31*
19	.09	-.01	.37**	.35**

* $p \leq .05$

** $p \leq .01$

Range: -.48 to .37

Average absolute value of correlations = .15

Table 4

Multiple Correlations for 19 AMI Scales on Each SSHA Scale (N=66)

SSHA Scales	R	R^2	P
DA	.62	.38	.13
WM	.57	.32	.33
TA	.62	.38	.13
EA	.73	.54	.02

Table 5

Correlations Between AMI Scales and AMI Canonical Variate (N=126)

AMI	1	2	3	4	5	6	7	8	9	10
AMI Variate	-.06	-.11	-.29	-.10	-.22	.13	.32	.08	.07	-.03
AMI	11	12	13	14	15	16	17	18	19	
AMI Variate	.23	.42	.22	.54	.42	.51	.03	-.32	-.39	

Table 6

Correlations Between SSHA Scales and SSHA Canonical Variate (N=108)

		DA	WM	TA	EA
SSHA Variate	r:	-.69	-.59	-.35	-.82
	r^2:	.48	.35	.12	.67

Average $\bar{r}^2$ = .40 = variance extracted from SSHA by its canonical variate

Table 7

Correlations Between SSHA & AMI and 3 Dependent Variables

		Winter Registration	Credit Completion Ratio	Grade Point Average
Multiple Correlation	SSHA (4 scales) (N=108)	.31*	.29	.20
Multiple Correlation	AMI (19 scales) (N=126)	.54	.47	.54
Pearson Product Correlation	Composite Score for SSHA Scales (N=108)	.26**	.24**	.17*

*$p \leq .05$ **$p \leq .01$