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ABSTRACT

A study examined how self-efficacy, causal attribution, and outcome expectancy beliefs are related to reading and writing for ethnically diverse college freshmen and whether the patterns of belief-performance relationships for ethnically diverse students are similar to those found for white, middle class populations. Subjects in the ethnic sample were 138 freshman students (47 males, 91 females) and included 50 African Americans, and 68 Mexican Americans or Hispanics at a western state university; those in the comparison sample were 150 predominantly white, middle class undergraduate students (29 male, 121 females) at a midwestern state university. Both samples were administered measures to assess self-efficacy, outcome expectancy, causal attributions, reading performance, and writing performance. Results indicated differences between ethnic students and white, middle class students in the patterns of beliefs and in the relationships of beliefs to performance for reading and writing. These differences may significantly affect persistence and effort in reading and writing activities that in turn affect skill development. (Two tables of data are included.) (SR)

RELATIONSHIP OF SELF-EFFICACY BELIEFS, CAUSAL ATTRIBUTION, AND OUTCOME EXPECTANCY TO READING AND WRITING PERFORMANCE FOR ETHNICALLY DIVERSE COLLEGE FRESHMAN

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Relationship of Self-Efficacy Beliefs, Causal Attribution, and Outcome Expectancy to Reading and Writing Performance for Ethnically Diverse College Freshman

Previous research has found that self-efficacy for reading and writing, causal attribution for success or failure in reading and writing, and outcome expectancies concerning the importance of reading and writing for achieving life goals are related to reading and writing success (Bruning, Shell, & Murphy, 1987; Hiebert, Winograd, & Danner, 1984; McCarthy, Meier, & Rinderer, 1985; Nicholls, 1979; Paris & Oka, 1986; Shell, Murphy, & Bruning, 1989). This research has found that efficacy, attribution, and outcome expectancy significantly predict reading and writing performance in regression models and that beliefs and performance for reading and writing are canonically related through a single underlying structure. These relationships, however, have only been extensively examined on white, middle class samples. As a result, the pattern of relationship between efficacy, attribution, and outcome expectancy and reading or writing for ethnically diverse populations is not well understood.

The purpose of this study was to examine how self-efficacy, causal attribution, and outcome expectancy beliefs are related to reading and writing for ethnically diverse college freshman and whether the patterns of belief - performance relationships for ethnically diverse students are similar to those found for white, middle class populations.

Method

Subjects

Subjects in the ethnic student sample were 138 freshman students (Male = 47; Female = 91; African American = 50; Mexican American or

Hispanic = 68; Other = 20) participating in a special program for students who had received a flexible admittance to a western state university.

Subjects in the comparison sample were 150 predominantly white, middle class undergraduate college students (Male = 29; Female = 121) between the ages of 18-23 in a teacher education program at a midwestern state university.

Measures

Self-efficacy was assessed for both samples by having subjects indicate their confidence on a scale of 0-100 for performing reading and writing tasks. The reading instrument contained two subscales: (a) reading and understanding 17 reading tasks (e.g., a novel, an introductory text book), and (b) performing 9 reading sub-skills (e.g., recognize parts of speech). The writing instrument contained two subscales: (a) completing 16 writing tasks (e.g., write a 15 page term paper), and (b) performing 8 writing sub-skills (e.g., correctly use parts of speech). Self-efficacy scores were computed by calculating subscale mean scores resulting in two self-efficacy scores each for reading and writing.

Outcome Expectancy for both samples was assessed by having subjects rate on a 7-point Likert scale the importance of reading and writing for achieving 15 life goals. Outcome expectancy scores for reading and writing were created by calculating the mean score of the 15 items in each scale.

Causal Attributions for reading and writing success and failure were measured with separate scales for reading and writing and for success and failure attribution. For the ethnic student sample,

subjects were asked to rate the importance of each of 8 causes on each scale, using a 5-point Likert scale from 1 (Definitely Unimportant) to 5 (Definitely Important). Ratings for each individual cause were used in the analysis. For the comparison sample, subjects were asked to indicate which of two causes was more important and the degree to which it was more important on a semantic differential type scale providing all possible pairings of 7 causes. Scores for each cause were derived by summing the pairwise scores for each cause.

Reading performance for the ethnic sample was measured with the College Preparedness Inventory. Reading performance for the comparison sample was measured with the Degrees of Reading Power test (DRP). This test provides a single score ranging from 1 to 63 indicating level of reading comprehension.

Writing performance for the ethnic sample was assessed by having subjects write a concise, organized essay explaining why a college education is important. Essays were holistically/analytically scored with assessment of realization, logic clarity, organization, density, and language usage. A score of 0-20 was assigned to each assessment category and the total writing score was obtained by summing the 5 category scores creating a total score ranging from 0 -100. For the comparison sample, subjects were asked to write a concise, organized essay explaining all the qualities and characteristics of an excellent teacher. Essays were holistically/analytically scored with assessment of conventions, syntactic maturity, style, and organization. A score of 1-4 was assigned to each rating area within scoring category and category scores were obtained by averaging the within category ratings. A total score of 4-16 was obtained by summing the 4 category scores.

Data Analysis

Data were analyzed with stepwise multiple regression analysis. Within domain models were developed for reading and writing using only their respective belief variables. Cross domain models were developed using belief variables for both reading and writing. Following regression analysis a canonical correlation analysis was conducted to examine the overall structure of the relationships between reading and writing and their associated belief variables and a factor analysis was conducted to examine the inter-correlations between belief variables. The results of these analyses were then compared to the results of similar analyses performed on the previous comparison sample of white, middle class college students.

Results and Discussion

Results of the regression analyses are provided in Table 1. When belief variables were entered linearly no variables were significant in the within domain reading model and only a writing variable (attribution of failure to lack of usual effort) was significant in the cross domain model. These models were substantially different from the model obtained for the comparison sample (Table 1), both in the structure of the models and the magnitude of explained variance. For writing, only attribution variables entered the within and cross domain models. These models were different in structure from the comparison sample which had efficacy as the only significant variable in the model. The magnitude of explained variance for the ethnic sample, however, was higher than the explained variance for the comparison sample.

Examination of the relationships for individual variables indicated a number of curvilinear trends particularly for self-efficacy variables.

Curvilinear equations were developed for these variables and the regression was conducted using these equations. The results of the curvilinear analyses (Table 1) indicated substantial differences between the curvilinear and linear regression models for reading and writing. For reading, a larger amount of variance was explained in the curvilinear model and the structure of the regression models was more like the model obtained for the comparison sample with a combination of efficacy and attribution variables entering the model. The curvilinear writing model differed from the linear model primarily in the inclusion of self-efficacy variables with the attribution variables found in the linear model. The inclusion of efficacy made these models more similar to the model for the comparison sample.

Canonical analysis did not identify a significant canonical correlation between the reading and writing variables and the belief variables Wilks λ = .45, Rao's $F(64, 144) = 1.10$, $p = .31$. This finding indicates that reading, writing, and beliefs do not share an underlying dimensionality. This result is different from that obtained for the comparison sample and other white, middle class college, junior high, and high school students that we have studied where a strong canonical relationship has been found. The lack of a significant canonical relationship does not appear to be due to a difference in correlation between reading and writing as the correlation for the ethnic sample (r = .43) is consistent with the correlation obtained for the comparison sample (r = .40).

The factor structures for belief variables for the ethnic and comparison samples are provided in Table 2. Although, scree analysis indicated 5 primary factors for both groups, there were substantial

differences in factor structure between the two groups with differences were primarily related to the patterns of causal attribution loadings. White, middle class students appear to differentiate causality for both success and failure by an internal - external dimension (Factors 1 & 5), attribute to luck negatively from an internal controllable dimension of effort and ability [as defined in this study] (Factor 3), and relate enjoyment to effort but not to intelligence or ability. Ethnic students, however, appear to differentiate causality by success or failure dimensions (Factors 1 & 2) rather than an internal -external dimension, do not have a negative linkage between luck attribution and effort or intelligence (Factor 3), and relate enjoyment to all other internal attributions (Factors 1 & 2). The factor patterns for ethnic students would suggest that these students are not making strong discriminations between possible causes for success or failure. In essence their attributions do not appear to be discriminable along either internal - external, stable - unstable, or controllable - uncontrollable dimensions. Since the pattern of attributions on these dimension has been found to influence motivation and performance in other studies, the lack of a consistent attribution pattern for ethnic students may play a role in their relatively poor performance in reading and writing.

Overall the results of these analyses indicate differences between ethnic students and white, middle class students in the patterns of beliefs and in the relationships of beliefs to performance for reading and writing. These differences may significantly affect persistence and effort in reading and writing activities that in turn affect skill development. Belief differences may also affect how positively these

students feel about reading and writing. Further research is needed to determine how consistent these identified differences will be across other samples and how differences in beliefs that do exist develop. Certainly, the findings can be potentially explained by the past experience of ethnic, at risk students in reading and writing. Consistent poor performance, regardless of what the student did to try to improve, could conceivably lead to an attribution pattern similar to that of the ethnic students in this study. Essentially, no strong distinction is made between causal dimensions because no particular cause has significantly affected performance differently from any other cause. The findings for self-efficacy could reflect the fact that efficacy becomes a stronger predictor of performance as skill increases. The relatively poor performance of all ethnic students would suggest that subskill abilities are not fully developed; therefore, skill differences rather than efficacy differences would most likely influence performance variance for these students.

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Table 1
Regression Models

Ethnic Student Sample

Step	Variable	Cumm. R	Cumm. R^2	R^2 Change	F Change
	Variables Entered in Linear Form				
Reading Models					
	Within Domain				
	No variables significant				
	Cross Domain				
1	Writing Failure Usual Effort	.204	.042	.042	4.51*
Writing Models					
	Within Domain				
1	Writing Failure Usual Effort	.292	.086	.086	11.03**
2	Writing Failure Intelligence (N)	.344	.118	.033	5.45*
	Cross Domain				
1	Writing Failure Usual Effort	.291	.085	.085	10.58**
2	Reading Success Task (N)	.345	.119	.034	4.36*
3	Reading Success Help	.397	.157	.038	5.11*
4	Writing Failure Intelligence (N)	.451	.204	.046	6.42*
	Variables Entered in Curvilinear Form				
Reading Models					
	Within Domain				
1	Reading Failure Usual Effort (C)	.242	.059	.059	7.34**
2	Reading Component Efficacy (C)	.319	.102	.043	5.51*
	Cross Domain				
1	Writing Task Efficacy (C)	.286	.082	.082	9.25**
2	Writing Success Usual Effort (C)	.372	.139	.057	6.80*
3	Reading Success Ability	.450	.202	.064	8.14**
4	Reading Failure Usual Effort (C)	.502	.252	.049	6.67*
5	Writing Component Efficacy (C)	.537	.288	.036	5.09*

Step	Variable	Cumm. R	Cumm. R^2	R^2 Change	F Change
Writing Models					
Within Domain					
1	Writing Failure Usual Effort	.292	.086	.086	11.03**
2	Writing Task Efficacy (C)	.379	.143	.058	7.92**
Cross Domain					
1	Reading Success Task (C)	.306	.094	.094	11.82**
2	Writing Task Efficacy (C)	.401	.167	.073	9.93**
3	Reading Success Ability	.480	.230	.063	9.20**
4	Writing Failure Usual Effort	.523	.273	.043	6.53*

Comparison Sample

Step	Variable	Cumm. R	Cumm. R^2	R^2 Change	F Change
Reading					
1	Reading Component Efficacy	.446	.199	.199	36.84**
2	Writing Success Teacher (N)	.493	.243	.044	8.47**
3	Reading Success Intelligence (N)	.526	.277	.034	6.87**
4	Reading Success Ability	.555	.308	.031	6.46*
5	Writing Success Effort (N)	.575	.330	.022	4.79*
6	Reading Success Effort	.595	.354	.024	5.26*
7	Writing Success Ability	.610	.372	.018	4.10*
Writing					
1	Writing Component Efficacy	.301	.091	.091	14.56**

Note. N = Negative Correlation. C = Curvilinear Relationship

*$p < .05$. **$p < .01$.

Table 2

Factor Structure of Efficacy, Causal Attribution and Outcome Expectancy

Ethnic Sample		Comparison Sample	
Variable	r	Variable	r
	Factor 1		
R F Usual Effort	.83	W S Intelligence	.69
R F Extra Effort	.78	W F Intelligence	.65
W F Extra Effort	.78	R S Ability	.64
R F Help	.75	W S Ability	.63
W F Usual Effort	.68	R S Intelligence	.62
W F Help	.67	R F Intelligence	.60
W F Intelligence	.56	R F Ability	.53
R F Reading Ability	.52	W F Ability	.51
R F Intelligence	.49	R S Effort	.41*
R F Enjoyment	.49	W S Effort	.38*
R F Task Difficulty	.32*	W F Effort	.33*
		R F Task Difficulty	.31*
		R F Effort	.30*
	Factor 2		
R S Extra Effort	.79	Reading Component Efficacy	.84
R S Help	.67	Writing Component Efficacy	.82
R S Reading Ability	.66	Writing Task Efficacy	.80
R S Intelligence	.60	Reading Task Efficacy	.67
W S Extra Effort	.58	Writing Outcome Expectancy	.27*
W S Usual Effort	.57	Reading Outcome Expectancy	.25*
W S Help	.53		
R S Enjoyment	.52		
Reading Outcome Expectancy	.49		
R S Usual Effort	.42		
W S Intelligence	.28		
Writing Outcome Expectancy	.26*		
	Factor 3		
W S Luck	.82	R F Luck	- 3
R F Luck	.75	W F Luck	-.74
W F Luck	.70	W F Effort	.49
R S Luck	.67	R F Effort	.43
W F Intelligence	.34*	R F Ability	.41*
Writing Outcome Expectancy	.34*	W F Ability	.39*
R F Reading Ability	.29*	Writing Outcome Expectancy	.34
		Reading Outcome Expectancy	.31

Factor 4

Reading Component Efficacy	.81	W S Enjoyment	.63
Writing Task Efficacy	.79	W F Enjoyment	.57
Writing Component Efficacy	.71	R S Enjoyment	.56
Reading Task Efficacy	.68	R F Enjoyment	.54
		R S Effort	.45
		W S Effort	.41
		W F Effort	.36*
		R F Effort	.34*

Factor 5

R S Task Difficulty	.41	W S Teacher Practices (Help)	.74
R F Enjoyment	.40*	R S Teacher Practices (Help)	.60
Writing Outcome Expectancy	.37*	W F Teacher Practices (Help)	.56
W S Help	.37*	R F Teacher Practices (Help)	.38
R S Help	.35*	R F Task Difficulty	.36
R F Task Difficulty	.32	W S Task Difficulty	.35
R F Help	.29*	W F Task Difficulty	.32
R S Intelligence	-.26*		

* = Secondary Loading
R S = Reading Success
R F = Reading Failure
W S = Writing Success
W F = Writing Failure