



Sources of Academic and Self-Regulatory Self-Efficacy of At-Risk Students in an Alternative School Environment

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Literature Review

- Self-efficacy, the belief in one's ability to complete a given task, has been linked with achievement and motivation to succeed. Self-efficacy is informed by interpreting one's mastery experiences, vicarious experiences, social persuasions, and physiological states (Bandura, 1997).
- Researchers have suggested that at-risk students have lower academic self-efficacy than their peers (Carroll et al., 2013).
- At-risk students are more likely to have been suspended, to be in a special education program, to commit truant behaviors, to have lower achievement scores, and to drop out of school (Nichols & Steffy, 1999).
- Few researchers have examined how at-risk adolescents develop their academic self-efficacy given their unique set of learning experiences, many of them unfavorable.

Purpose of the Study

To investigate how the four hypothesized sources of self-efficacy influence at-risk adolescents' academic and self-regulatory self-efficacy, and whether these reports differ by gender or race/ethnicity.

Method

Participants

Participants were 121 students in Grades 7-12 from an alternative combined middle and high school in the Southeastern United States. Students are accepted to this school each year based on documentation of challenges in the regular education setting. Self-reports indicated that 43.7% were girls ($M_{age} = 16.72, SD = 1.67$) and 54.4% were boys ($M_{age} = 17.27, SD = 1.42$); 67% were Caucasian, 16.5% African American, and 13.0% multiracial.

Data Sources

- Paper surveys were administered in classes in the fall semester of 2012.
- The academic and self-regulatory self-efficacy scales were modified from Bandura's (2006) Children's Self-Efficacy Scale. The sources of self-efficacy measures were adapted from the Sources of Middle School Mathematics Self-Efficacy scale created by Usher and Pajares (2009).

Table 1
Sample Items From Variables Used in Study

Variable	Sample Item	Number of Items	α
Academic Self-Efficacy	How well can you learn science?	6	.72
Self-Regulatory Self-Efficacy	How well can you finish your homework on time?	10	.85
Sources of Self-Efficacy			
Mastery Experience	I have always been successful at school.	6	.80
Vicarious Experience	Seeing kids do better than me in school pushes me to do better.	9	.89
Social Persuasion	My classmates like to work with me in a subject because they think I'm good at it.	9	.90
Physiological State	School work makes me nervous.	9	.92

Note. Response categories for self-efficacy were 1 (not very well at all) to 6 (very well); response categories for the sources of self-efficacy were 1 (definitely false) to 6 (definitely true).

Analyses

- Pearson bivariate correlation coefficients were for all variables.
- Analysis of variance was used to test for group differences.
- Multiple linear regression was conducted to examine the relationship between the four sources of self-efficacy and efficacy beliefs; structure coefficients were used to show the percentage of explained variance uniquely predicted by each source for each efficacy belief.

Results

Table 2
Means, Standard Deviations, and Zero-order Correlations for Variables in the Study

	N	M	SD	1	2	3	4	5
1. Academic self-efficacy	102	4.39	0.86					
2. Self-regulatory self-efficacy	102	4.03	0.92	.75**				
3. Mastery experience	91	3.95	1.00	.63**	.66**			
4. Vicarious experience	90	4.06	0.94	.70**	.68**	.76**		
5. Social persuasions	88	4.26	0.97	.64**	.63**	.75**	.77*	
6. Physiological state	87	3.68	1.09	-.03	.04	.15	.10	-.02

Note. Mean scores for all variables range from 1 (low) to 6 (high).

* $p < .05$; ** $p < .001$

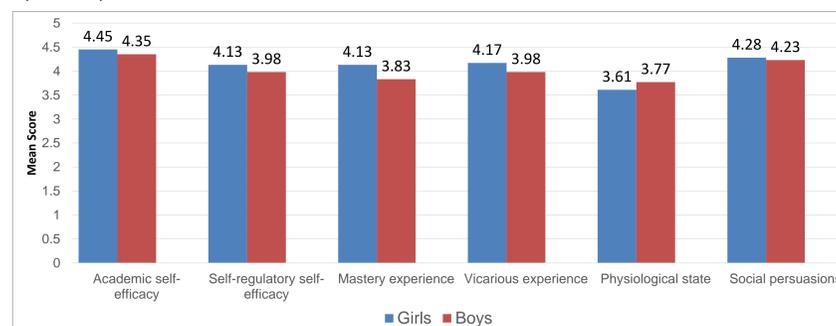


Figure 1. Mean scores for all variables by gender.

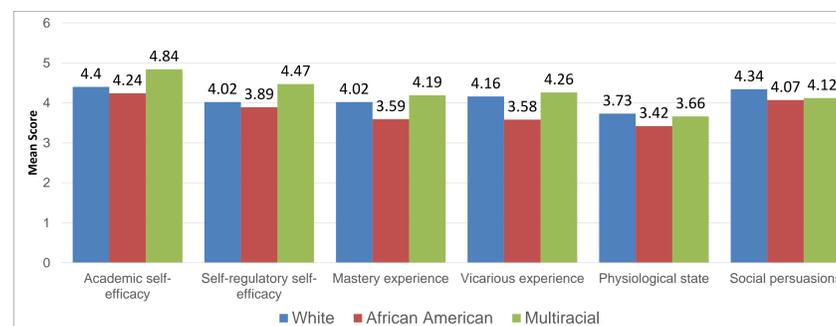


Figure 2. Mean scores for all variables by race.

Table 3
Standardized Regression Coefficients and Structure Coefficients for the Prediction of Academic Self-Efficacy and Self-Efficacy for Self-Regulation for Total Sample

Variables	Academic self-efficacy		Self-regulatory self-efficacy	
	β	SC	β	SC
Mastery experiences	ns	.79	ns	.87
Vicarious experiences	0.42**	.90	0.33*	.91
Social persuasions	0.29*	.76	0.24*	.76
Physiological States	-0.29*	-.08	ns	.01
Model R ²	.49***		.47***	

Note. SC represents structure coefficient.

* $p < .05$. ** $p < .001$. *** $p < .0001$.



Figure 3. Percentage of explained variance in academic self-efficacy uniquely predicted by each source.



Figure 4. Percentage of explained variance in self-regulatory self-efficacy uniquely predicted by each source.

Key Findings and Conclusions

- Mastery experiences, vicarious experiences, and social persuasions were significantly correlated with academic self-efficacy and self-regulatory self-efficacy; physiological state was not correlated with efficacy beliefs or any of the sources (see Table 2).
- Students' self-efficacy beliefs did not differ as a function of gender [$F(1, 98) = 0.52, p = .47$ for academic self-efficacy; $F(1, 98) = .65, p = .42$ for self-regulatory self-efficacy] or ethnicity [$F(2, 96) = 2.36, p = .10$ for academic self-efficacy; $F(2, 96) = 1.8, p = .17$ for self-regulatory self-efficacy].
- In our sample, mastery experience did not predict efficacy beliefs (see Table 3). This is inconsistent with past research, which has found perceive mastery to be a consistent source of self-efficacy. The fact that at-risk students are less likely to have had mastery experiences in school makes them more likely to rely on sources of efficacy-relevant information.
- Vicarious experiences explained the largest portion of variance in self-efficacy, highlighting the importance of social models for at-risk students for building efficacy beliefs (see Figure 3 and Figure 4).
- Because at-risk students have a history of poor academic performance, they do not rely as much on past experiences to form their efficacy beliefs. Teachers and schools of at-risk students should work diligently to create positive social models for students to build efficacy beliefs.

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