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**The Relationship Between Academic-Efficacy
and Persistence in Adult Remedial Education: A Replication Study¹**

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ABSTRACT

Self-efficacy is considered a construct influencing persistence (Bandura 1997, 2001, 2012). For adults pursuing academic remediation in preparation for higher education, persistence is a specific barrier to success in approximately 50% of cases. This study examined the relationships between general self-efficacy and academic-efficacy constructs with adult remedial education persistence for $N = 88$ students, and found a lack of relationship consistent with the earlier sample of students (Holmquist, Gable, & Billups, 2013). Further, few relationships were found with selected student demographic characteristics.

Study Purpose

The purpose of this study was to investigate the relationship between academic-efficacy and persistence in adult remedial education. As cited in Holmquist, Gable, and Billups (2013), “Mitigating barriers that inhibit persistence has been a recurring strategy previously focused on issues such as financial aid, child care, and employment (Long & Kurlaender, 2009). However, even when these barriers are mitigated, a large percentage of remediating adults do not persist in their course of preparation” (p. 1). This study sought to replicate the earlier study which investigated self-efficacy and determine if academic-efficacy was a barrier to persistence. Bandura’s (1997, p. 36) four dimensions of Control over actions, Self-regulation of thought, Motivation, and Affective state were employed along with the Schwarzer (1995) Self-efficacy scale and selected demographic variables.

Background

This is the authors’ second study of adult remedial education students’ persistence. Because of the outcome of the first study (Holmquist, Gable, & Billups, 2013) noted above, further research was undertaken to measure academic-efficacy specifically to determine if there was a relationship between academic-efficacy and persistence. As no survey instrument for

measuring adult academic-efficacy was found, one was created based on constructs from Albert Bandura's work.

Research in the field of adult remedial education concludes that "persistence is the underpinning of academic progress that results in positive outcomes and an improved quality of life for adult learners" (Nash & Kallenbach, 2009, p.3). "Much of the literature on adult education defines persistence as the length of time adults attend a class or tutoring session, but learning may extend beyond attendance in a specific program (Comings, Parrella, Soricone, 1999, p.3). Study 1 did not establish a relationship between self-efficacy and persistence, which was surprising given the extensive agreement in the field of education that a relationship would be expected to exist. The authors wished to explore further to see if academic-efficacy might have a relationship to persistence.

As cited in Holmquist, Gable, & Billups, 2013, "Self-efficacy is defined as one's belief in their capabilities (Bandura, 2012, p. 13) or one's perception of their ability to perform (McCoach, Gable, Madura, 2013, p. 16)". Based on these two definitions, we can say academic-efficacy is defined as one's belief in their academic capabilities or ability to perform academically.

Academic-efficacy might be the reason a student continues either in a program of remediation or in self-directed study. The research questions for this study were relative to this specific point of reference. Using Bandura's Social Cognitive Theory as a frame of reference, this survey was used to explore his view that motivation is goal-directed behavior instigated and sustained by expectations concerning anticipated outcomes of actions and self-efficacy for performing those actions (Bandura, 1986). For adults in remediation, the goal or outcome is high school completion, GED, or employment. Academic-efficacy was explored to determine if it might be a supporting player in reaching that goal even when barriers such as child care, employment, transportation, etc. make reaching the goal difficult.

Measuring Academic-Efficacy

The survey was designed using Bandura's concept that "Efficacy beliefs are concerned not only with the exercise of control over action, but also with the self-regulation of thought processes, motivation, and affective and physiological states" (Bandura 1997, p. 36).

Control Over Action

"Among the mechanisms of personal agency, none is more central or pervasive than people's beliefs in their capability to exercise some measure of control over their own functioning and over environmental events" (Bandura, 2001, p.10). "In a nutshell, people either believe that outcomes occur independently of how they behave (external locus of control) or the outcomes are highly contingent on their behavior (internal locus of control)" (Schunk, 1996, p.303).

Self-Regulation

"In his social cognitive theory, Bandura (1986) put forth a model of human functioning in which self-regulatory factors are accorded a central role, and educational researchers have provided insights over the past two decades about how these factors operate within learning contexts" (Usher & Pajares, 2008, p. 443).

Motivation

Describing Bandura's Social Cognitive Theory (1986), Schunk (1996) states, "In social cognitive theory, goals and expectations are important learning mechanisms....Bandura views motivation as goal-directed behavior instigated and sustained by people's expectations concerning the anticipated outcomes of their actions and their self-efficacy for performing those actions.

Attributions and other cognitions (e.g., values, perceived similarity) influence motivation in part through their effects on goals and expectations” (p. 310).

Affective & Physiological States

As noted in Holmquist, Gable and Billups (2013), “When Bandura (1997) suggested that efficacy is a generative capability in which cognitive, social, behavioral as well as emotional subskills must be organized and effectively orchestrated toward various outcomes, he was indicating that emotional and physical conditions impact efficacy” (p. 8). “People who have strong beliefs in their capabilities approach difficulty tasks as challenges to be mastered rather than as threats to be avoided....They attribute failure to insufficient effort....These finding offer substantial support for the view that beliefs of personal efficacy are active contributors to, rather than mere inert predictors of human attainments” (Bandura, 1997, p. 39).

Theoretical Framework

Utilizing Bandura’s Social Learning Theory as the theoretical framework, self-efficacy was identified as having a significant relationship to persistence, the desired behavior necessary for academic success (Bandura, 1977, 1986, 1995, 1997, 2001, 2012). “Efficacy beliefs influence how people think, feel, motivate themselves, and act” (Bandura, 1995, p. 2). A lack of self-efficacy refers to a person’s belief that they lack the capabilities to organize and execute situations. “To make their way successfully through a complex world full of challenges and hazards, people have to make good judgments about their capabilities, anticipate the probable effects of different events and courses of action, size up socio-structural opportunities and constraints, and regulate their behavior accordingly” (Bandura, 2001, p. 3). In order to determine if academic-efficacy could be distinguished from general self-efficacy, a survey examining the more granular concepts of academic efficacy was applied. According to Bandura,

“the efficacy belief system is not a global trait but a differentiated set of self-beliefs linked to distinct realms of functioning. Multidomain measures reveal the patterning and degree of generality of people’s sense of personal efficacy” (Schunk, p. 307).

Methodology

The primary purpose of this study was to investigate whether academic-efficacy was related as a barrier to persistence. Three research questions were addressed:

1. What is the relationship between general self-efficacy and the four specific academic self-efficacy dimensions: control over actions, self-regulation of thought, motivation, and affective state?
2. What are the relationships between general and specific academic efficacy and persistence in adult remedial education?
3. What are the relationships between selected student demographics and persistence in school?

Sample

The sample of $N = 88$ was selected from three New England adult education centers. Criteria for selection included adult students with at least 12 hours of participation and a pre-test to determine sufficient reading skill to participate in the survey.

Instrumentation

Data collected for the quantitative study utilized a survey (see Appendix A), which included demographic questions (see Table 2) to identify possible barriers to persistence. The instrument assessed five dimensions with alpha reliabilities for the data as follows: general self-efficacy (10 items, .85) developed by Schwarzer (1995), and four 6-items dimensions – control over actions

(.85), self-regulation of thought (.81), motivation (.87), and affective State (.85). Persistence was operationally defined as the attendance rate during the Fall 2013 semester.

Data Collection

Survey questionnaires were completed by participants at the beginning of the Fall 2013 semester.

Analysis

Data analyses using SPSS included descriptive statistics, correlations, step-wise multiple regression, and *t*-tests. If significant relationships ($p < .05$) were found, effect sizes were reported.

Results

The findings of the analyses are presented for each research question.

What is the relationship between general self-efficacy and the four specific academic dimensions of self-efficacy: control over actions: self-regulation of thought, motivation, and affective state?

The solid triangle in Table 1 contains the correlations of general self-efficacy and the four self-efficacy dimensions and the inter-correlations among the self-efficacy dimensions. The highest correlations ($p < .001$) were found for general self-efficacy and self-regulation ($r = .47, r^2 = .22$) and affective state ($r = .45, r^2 = .20$). As expected, the four self-efficacy dimensions exhibited moderate to high intercorrelations.

The primary research question of interest was research question 2:

What are the relationships between general and specific academic efficacy and persistence in adult remedial education?

The left column of Table 1 contains the targeted correlations. Examination of the correlations indicated that the general self-efficacy and four self-efficacy dimension had no relationship with persistence in school; thus no self-efficacy dimensions entered the step-wise regression equation. The attendance rate data averaged 67.85% and ranged from 10% to 100%. The lack of relationship appears not be due to a restriction of range for the attendance data.

The final research question examined the relationship between selected student demographics and persistence (I.e., attendance).

What are the relationships between selected student demographics and persistence in school?

Since the expected relationships between the self-efficacy constructs did not exist, it was important to examine if the demographic characteristics of the students assisted in explaining persistence levels. Table 2 contains the results of the *t*-test comparisons for students indicating *yes* and *no* for each of the possible demographic issues. Examination of the findings indicated that older students had higher persistence levels ($t = 2.44, p = .017, d = .53$, medium effect size). In addition, students indicating that it was hard to attend class sometimes due to their work schedule had higher persistence levels ($t = 2.36, p = .020, d = .69$, medium/large effect size). Apparently these students were able to deal with their work schedules sufficiently and persist in school. The final analyses of the demographic variables consisted of correlating the grade level identified when “difficulties started in school” and last grade completed. The respective correlations of $r = .03$ and $r = .02$ indicated these variables were not related to persistence.

Discussion and Conclusions

Based on the self-efficacy literature offered by Bandura, the authors expected that for this new sample of adult student some relationship would exist with persistence. Consistent with the findings of the earlier sample of $N = 75$ adult students at a different site (Holmquist, Gable, & Billups (2013), it appears that the self-efficacy construct does not explain variation in persistence.

Future Research

For these adult students, there must be other variables that explain their persistence levels. To further examine this important persistence issue, a new qualitative study with structured interviews at adult remedial education sites is underway. It is anticipated that the thematic analysis of the interview scripts can shed further light on why adults persist in school.

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Table 1

Intercorrelations of Self-Efficacy Constructs with Persistence

	Persistence	Control	Self- Regulation	Motivation	Affective
Control	.04				
Self-Regulation	.02	.55			
Motivation	.07	.44	.63		
Affective	.01	.50	.71	.67	
General SE	.02	.22	.47	.28	.45

Table 2**Relationships of Student Demographics to Persistence**

Demographic Variable	Yes			No			<i>t</i>	<i>p</i>	<i>d</i>
	<i>N</i>	<i>M</i>	<i>SD</i>	<i>N</i>	<i>M</i>	<i>SD</i>			
Age 25+	37	75.80	25.50	50	61.60	28.10	2.44	.017	.53
Gender - Female?	47	68.50	29.50	40	66.60	25.90	.31	.756	
Married?	14	76.30	20.90	73	65.90	28.70	1.27	.205	
Family Encouraged?	66	69.11	26.11	20	64.20	33.15	.69	.492	
Primary Language - English?	62	66.40	28.03	24	70.92	28.06	.67	.505	
Work Schedule - Difficult?	15	82.67	25.02	72	64.50	27.46	2.36	.020	.69
Child Care - Difficult?	16	70.13	28.92	71	67.07	27.70	.39	.694	
Health Problems?	11	68.55	17.87	75	67.08	28.97	.16	.870	

Note . Effect size guidelines (*d*) are as follows: .20 = small, .50 = medium, .80 = large.

