Self-Efficacy, Textbook Use, and Activity Preferences of College Students in a High-Poverty Area

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The purpose of this study was to investigate the relationship between academic self-efficacy and preferences regarding the use of text materials and in-class activities of college students at a university that serves one of the highest-poverty regions in the United States.

Theoretical Framework

Self-efficacy is the personal belief in one's ability to be successful (Bandura, 1977). This concept has been studied in relation to a wide variety of activities, from health-related behaviors to retirement to careers to schooling. A common finding is that socioeconomic status (SES) is positively correlated with self-efficacy – individuals from higher-income backgrounds have higher self-efficacy and those with lower income have lower self-efficacy. Gilani (2003), in a study of the homeless, found the ones with the lowest self-efficacy were the least likely to persist in patterns of activity that would help ameliorate their poverty, so they remained homeless. Grabowski (2006) studied the economic self-efficacy of mothers who had received welfare at some point and found that their self-efficacy was lower during the time they were receiving public assistance.

In the realm of academics, Caprara et al. (2008) found in a longitudinal study that the self-efficacy for self-regulated learning dropped for all their subjects between the ages of 12 and 18. However, although there was no difference in self-efficacy at age 12 across SES groups, the rate of decline in the ensuing years was related to SES, with the poorest students having the largest drops in self-efficacy by the age of 18. In a study of academic self-efficacy in the college age population, Wang and Castañeda-Sound (2008) found that first-generation college students reported an overall lower sense of academic self-efficacy compared to students whose parents

had previously attended college. According to Stephens, Fryberg, Markus, Johnson, and Covarrubias (2012), these first-generation college students are more likely to be from working-class families of lower SES and may experience cultural discontinuity when they arrive at college, as they are moving from a background that stressed interdependence to one that expects independence. They may have come from high schools that did not adequately prepare them for the rigors of college studies, so they do not really know how to be college students, which makes them question their ability to be successful academically (Stephens et al.). Students' self-efficacy is related to the learning strategies they employ (Tanner & Jones, 2003), so incoming freshmen who have low self-efficacy likely will not use effective study strategies.

A continuing concern of faculty is the fact that students do not engage in preparatory activities such as reading the assigned texts / materials or reviewing notes, either before commencement of class time, or before examinations (Aagaard & Skidmore, 2004; Clump, Bauer, & Bradley, 2004; Lei, Bartlett, Gorney, & Herschbach, 2010; Sikorski et al., 2002). Studies regarding strategies that instructors might implement have suggested the implementation of quizzes over course materials, study / worksheets, "chunking" reading tasks into smaller units, and using the textbook as the basis of in-class instructional activities (Ruscio, 2001; Ryan, 2006; Aagaard & Skidmore, 2009). Problem-based learning techniques (Oliver, 2007), and investigation of student preferred teaching styles (Zhang, 2008) have also been considered.

Previous research at an institution serving a high-poverty area (Aagaard, Skidmore, & Conner, 2010) suggests that there is considerable variation with regard to student preferences as to how text materials are used and for what occurs during a given class session. Whether students engaged the assigned readings from text materials depended upon other factors. These included whether or not the text materials were associated with credit-bearing activities, if the text was

used during class time, and the relative size of the reading assignments (i.e., shorter is 'better'). First-year students felt that reading text materials before class time should not be required, while seniors acknowledged that reading such materials depended upon other factors, having learned to 'read the instructor' and adapt to the college environment more effectively. Students did express a preference for a lecture format in a course, but with some variation, including the introduction of related non-text materials, in-class group discussion, and advanced instructor-prepared organizers (e.g., PowerPoint slides). Online open-book quizzes and tests were preferred to in-class quizzes without the benefit of textbooks and notes. Freshmen and juniors-level students preferred a group presentation format in open-forum evaluative situations, whereas sophomores and seniors preferred to work independently.

Given that self-efficacy can increase with successful experience in a particular area (Chemers, Hu, & Garcia, 2001), it may be that the senior students have increased their academic self-efficacy since they arrived at college, regardless of how low it might have been when they arrived as freshmen. Looking at the preferences and practices of students with varying levels of self-efficacy would help determine whether this is the case.

Method, Participants, and Materials

Participants

This study employed a convenient cluster sample of 105 students taking summer classes at a regional university in the mid-south that serves one of the poorest regions in the United States. Sixty-one percent of respondents were female and nearly 100% were Caucasian. They reported 29 different majors, with the highest concentrations being education (17%), biology-related (13%), and agriculture-related (10%). The distribution across year in college is shown in Table 1.

Table 1

Sample Distribution Across Year in College

Year	n	%
Freshman	26	25
Sophomore	19	18
Junior	26	25
Senior	33	31
Graduate	1	1

Students were asked to self-report their GPA range. A large majority (63%) claimed a B average, while 30% reported a C average. The remaining 7% were split between A and D average grade point averages.

Instrumentation

The 19-item was employed to gauge student academic self-efficacy. This instrument has a single factor structure and is highly consistent internally (Cronbach's alpha=0.92). The SELF-A assesses student confidence with skills such as taking notes, getting ready for tests, and studying, as well as with motivation, time management, and attention. Participants are asked to indicate the percentage of confidence they have regarding the topic of each item, from 0% (Definitely Cannot Do It) up to 100% (Definitely Can Do It).

Participants were also administered a 25-item researcher-designed study survey (see Appendix A) that included 11 items regarding use of course textbooks, 11 items about preferences for use of class time and four demographic items. All items were multiple-choice. Textbook items asked whether students read their textbooks when assigned to do so, as well as whether particular strategies by the professor would get students to read their textbooks or not. Each class-time-use-preference item was forced choice between two options (for instance, between professor lecture and group activities).

Procedure

Researchers requested permission from course instructors to administer the surveys to their students in the last 15 minutes of a regularly scheduled class period. Courses surveyed were spread across the departments of agriculture, geology, biology, physics, philosophy, education, English, and history.

Analysis

Means and standard deviations of self-efficacy were computed. Frequency tables of study survey items by self-efficacy group (above vs. below the sample average) were produced

and visually inspected for effect size prior to statistical testing. Subsequently, three chi-square tests were conducted with a Bonferroni correction to alpha, lowering it from 0.05 to 0.0167.

Results

The students sampled at this university serving a high-poverty area of the U.S. had self-efficacy scores that were 10 points lower, on average, than the sample from New York used to validate the self-efficacy scale (see Table 2).

Table 2

Comparison of Validation Sample to Study Sample

Variable	Zimmerman & Kitsantas (N = 223)	Current Study Sample (N = 105)
Caucasian	81%	99%
Female	75%	61%
Freshmen & Sophomores	4%	43%
Mean Total SELF-A (std.) --		
Males	75.99 (12.61)	64.11 (14.57)
Females	76.10 (10.77)	66.11 (13.58)

The sample from this study showed average total SELF-A scores of nearly a standard deviation lower than reported by Zimmerman and Kitsantas (2007). That difference cannot be attributed to the larger proportion of upper classmen in the Zimmerman and Kitsantas study, however, as mean SELF-A scores for just juniors and seniors in the current study were also about 10 points lower: 66.11 (males) and 66.74 (females). This supports the idea that students from high-poverty counties come to college with lower academic self-efficacy.

Chi-square analyses were conducted for three items on the study survey and their relationship to students being above vs. below the overall sample average academic self-efficacy of 65.3:

1. Do you think you should be required to read material in the textbook before coming to class?

2. Do you actually read the textbook material when it is assigned?

3. What could the professor do to get you to read the textbook assignments?

    a. Give me an in-class quiz over material from the textbook assignment.

The frequency data for Item 1 are shown in Table 3. The relationship between self-efficacy and attitude toward required reading of the textbook was significant (chi-square=9.59, df=2, p=0.0083).

Table 3

Self-Efficacy and "Textbook Reading Should Be Required"

			Textbook reading should be required before coming to class			
			Yes	No	Depends	Total
Self-Efficacy	Above Average	Count	23	6	28	57
		Row %	40.4%	10.5%	49.1%	100%
	Below Average	Count	9	15	24	48
		Row %	18.8%	31.3%	50.0%	100%
		Total	32	21	52	105

Although about half of each self-efficacy group put conditions on whether they should be required to read the textbook or not ("it depends"), the other half of each group showed quite

different attitudes. The students with lower self-efficacy were less likely to believe that textbook reading should be required.

Table 4 displays the frequency data for Item 2. In order for chi-square to be a valid test, the categories of "no" and "depends" had to be combined, as only one student with higher self-efficacy answered "no" to this item. The relationship between self-efficacy and reading the textbook was also significant (chi-square=5.81, df=1, p=0.0160).

Table 4

Self-Efficacy and "Actually Read Textbook When it is Assigned"

			Actually read textbook when it is assigned		
			Yes	No/ Depends	Total
Self-Efficacy	Above Average	Count	36	21	57
		Row %	63.2%	36.8%	100%
	Below Average	Count	19	29	48
		Row %	39.6%	60.4%	100%
		Total	55	50	105

Over 60% of the students with higher self-efficacy said they actually did read the textbook when it was assigned. Nearly the same percentage of lower self-efficacy students said either they did not read the text (10% of them) or whether they read it or not depended on other factors.

The final chi-square analysis was not significant because the p-value did not meet the Bonferroni-adjusted alpha (chi-square=5.067, df=1, p=0.0244). The frequency results for Item 3a are shown in Table 5.

Table 5

Self-Efficacy and "Read Textbook if There was an In-Class Quiz"

			Read textbook if there was an in-class quiz over assignment		
			Might read	Most likely would read	Total
Self-Efficacy	Above Average	Count	10	46	56
		Row %	17.9%	82.1%	100%
	Below Average	Count	18	30	48
		Row %	37.5%	62.5%	100%
		Total	28	76	104

The trend for this item was the same as the previous two analyses. A higher percentage of students with high self-efficacy indicated they would read the textbook to prepare for an in-class quiz in contrast to low-self efficacy students. Although more than half of each group indicated they would read the assignment under this condition, over a third of the low self-efficacy group was still unsure whether a quiz was enough motivation.

Although not tested for significance, two of the study survey items dealt with a preference for individual vs. group work. In both instances, low self-efficacy students preferred working in groups to a higher extent (15%+ difference) than students with high self-efficacy.

Significance

The data collected support the idea that students from high-poverty areas enter college with reduced academic self-efficacy, as the average for the entire sample was lower than other published data. Those evidencing below-average academic self-efficacy in this sample were

significantly less likely to engage in the strategies that would help them be successful (such as reading their textbooks). If those in the "below" group were the first-generation college students, then it would support the literature that indicates they come to school unsure how to be successful at university work (Stephens et al., 2012). If those same students were influencing the trend data regarding preference for group vs. individual activities, it also supports the idea that the first-generation students face cultural discontinuity at college in switching from interdependence to an expectation of independence (Stephens et al., 2012).

This research has implications for high school and college faculty in high-poverty areas. Because so much literature points to a relationship between self-efficacy and academic outcomes, students coming from low SES backgrounds need experiences throughout middle and high school and on into college that give them confidence in their abilities, as well as explicit coaching in study skills. Instruction at both the secondary and postsecondary levels that incorporates a mix of group and independent work could also ease the transition for these students and increase the odds of their ultimate success.

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