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Self-Efficacy and Post-Secondary First-Term Student Achievement

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Abstract

Generalized self-efficacy is the overall belief in one's ability and Specific self-efficacy is task related. The study examined the extent and manner in which self-efficacy explains variation in first-term GPA. The *General Self-Efficacy Scale* was adapted and used with a sample of $N = 194$ students (34% male and 66% female) enrolled in a for-profit career education urban college. The data from two factors derived using an exploratory factor analysis, General self-efficacy and Specific self-efficacy, had alpha reliabilities of .73 and .75, respectively. General self-efficacy was correlated $r = .18$ with GPA and multiple regression analysis demonstrated that General incremented the explanation of variance 5% in GPA ($p < .01$). Specific correlated r = .17 with GPA ($p < .05$). General and Specific were significantly correlated ($r = .42$, $p < .001$). The two independent variables were equal predictors of success.

Introduction

The study "College" is part of one of the world's largest for-profit career education organizations operating more than 80 postsecondary institutions. At the College, 100% of the students commute to classes and 60% live in the metropolitan area. Students live in greater Boston's most difficult neighborhoods and grow up with low family income, abuse, gang violence, drugs, health problems, poor English, and academic underachievement.

A study of student responsibility indicated that 54% of community college students are under the age of 25 and are not prepared academically or psychologically, for what will be expected (Howell, 2001). They work to support dependents, frequently require childcare assistance, question their academic ability and perceive teachers as experts who dispense information and wisdom, are frequently first-generation students, and may have weak educational motivation.

First-term student success, at the College, is measured by academic achievement (a required minimum GPA of 1.5). Many students receive formal academic warnings at the end of their first term because of poor academic performance in terms of GPA (1.5-2.0) or are involuntarily withdrawn for a GPA less than 1.5. This study examined the relationship between self-efficacy, belief in one's capability (Bandura 1977, 1986, 1993, 1997), and first-term academic success using a modified version of the *General Self-Efficacy Scale (GSE)* (Schwarzer, 1992).

The College has an open-admissions policy. Only a high school diploma or a GED is required for entry. Admissions representatives have a quota of students to recruit each term. Consequently, admission standards are flexible, as would be expected in a for-profit college. In this business context, being able to predict those students likely to earn a GPA of 1.5 translates into institutional success because returning students generate future cash flow and greater profitability. The educational issue is being able to identify those students who need academic support to succeed. The goal of this study was to determine if the construct of self-efficacy (Bandura 1977, 1986, 1993, 1997) can predict student success and identify "at risk" students at the start of their first term at the College.

Background

Bandura (1986, 1997) indicated that self-efficacy is context-specific. Therefore, prediction of academic outcomes is enhanced by directly corresponding specificity. Bandura (1997), stated, "self-efficacy beliefs should be measured in terms of particularized judgments of capability that may vary across realms of activity, different levels of task demands within a given activity domain, and under different situational circumstances" (p.42). While corresponding specificity appears to impact the accuracy of outcome prediction for discrete task outcomes (Pajares, 1996a, 1997; Pajares & Schunk, 2001), more generalized self-efficacy measures may be appropriate when attempting to predict results that are important, but less task-specific. Bandura (1997) also comments on this issue as follows:

> Often, the interest is in predicting a wide range of activities from efficacy beliefs assessed across different levels or facets of functioning within a given domain. An example would be the effect on academic grade point average of perceived self-efficacy to regulate one's motivation and learning activities. In the last instance, the link between perceived self-efficacy and the subsequent performance attainments is verified by macrolevel relations that correlate aggregated efficacy beliefs with aggregated academic performances (p. 55).

This study examines perceived aggregated or General self-efficacy and macrolevel academic performance as measured by GPA achievement of first-term students.

Bong (1997) assessed academic self-efficacy in an experiment involving six school subjects: English, Spanish, U.S. History, algebra, geometry, and chemistry. Participants were composed of 578 students in grades 11 and 12 in Los Angeles County. She found that verbal and quantitative academic self-efficacy factors were positively and significantly correlated. She stated that … "the results simply provided an empirical justification for efficacy researchers to develop and use academic self-efficacy measures at various levels of specificity that correspond to the performance of interest" (p. 705). She also suggested that other personal variables on the generality of self-efficacy beliefs should be explored.

Generalized self-efficacy (Jerusalem & Schwarzer, 1992; Schwarzer, 1992, 1993) was used as the predictor in this study based on the premise that the greatest problem in a career college serving an urban, highly diverse, low-income population is students' inability to focus on educational effort due to life's general challenges, which materially detract from their academic performance. When referring to the aversive, frustrating, and stressful activities of everyday life, Bandura (1997) said, "…it is perceived self-regulatory efficacy, rather than perceived efficacy for the activity per se, that is most relevant" (p. 64). A premise of this study is that those who possess a more Generalized self-efficacy optimistically believe they are capable of handling life's problems and will see their academic grade achievement as part of the challenge.

In addition, when conceptions of subject-specific self-efficacy are expanded to include additional relevant factors such as self-regulation of learning activities, social ability to create supportive environments and to resist peer pressure that detracts from academic attainment, socioeconomic status, and the impact of familial relations, then measures of General self-efficacy are more predictive and account for substantially more of the variance in academic achievement (Bandura, Barbaranelli, Caprara, & Pastorelli, 1996; Bandura, 1997).

When new students don't know what learning tasks and skills will be needed, their belief in their capability to succeed cannot be based on past experience. They can only believe they have the ability to succeed based on generalized accomplishments and generalized self-beliefs, which has been labeled self-efficacy for learning because they are inferences made about one's capability to learn that which is required for success in a new environment (Pajares & Schunk, 2001). In this context, a strong, personal sense of General self-efficacy is particularly important for motivating first-term students because they have only a vague idea of what will be expected academically, to succeed.

Students entering postsecondary institutions for the first time have no postsecondary academic frame of reference and consequently are not able to make accurate judgments about their capability to perform well in specific tasks or subjects, in an unfamiliar learning environment. Therefore, a measure of more Generalized, rather than task or subject-specific, self-efficacy was determined to be a more congruent and useful predictor of success.

It would certainly be valuable both to students and to the institution if the likelihood of student success could be predicted, based on their self-efficacy, as students start their course of study. Given that information, the College could devise teaching and administrative strategies aimed at improving both first-term student and institutional performance.

Research Questions

In order to explore the relationship between self-efficacy and first-term student success at the College, the following research questions were asked:

1. To what extent and in what manner can self-efficacy explain variation in grade point average (GPA) after controlling variation due to age and gender?

2. What is the relationship between General self-efficacy and Specific self-efficacy attributes?

The Need for Additional Research

Many of the studies in the literature on self-efficacy and academics involve elementary, middle, and high school students. A smaller number of studies consider college students, in and outside of the United States. There were no studies of self-efficacy in for-profit career colleges found, yet there is a growing population of students pursuing this postsecondary educational alternative. There is therefore, a real need for additional research related to the impact of self-efficacy (self-judgment regarding one's personal capability to succeed) on academic success at the postsecondary level in a for-profit, career college context. In addition, the literature tends to consider self-efficacy in the context of specific subject areas, especially math and writing self-efficacy.

Gender and Self-Efficacy

Another substantial area of self-efficacy research has been concerned with the relationship between gender self-efficacy and academic performance. In a study of reading motivation involving 105 fourth and fifth graders, boys had less motivation, but the difference was not statistically significant (Wigfield & Guthrie, 1995). A study of elementary school children (Pajares, Miller, & Johnson, 1999), found no difference in writing self-efficacy after controlling for aptitude, but girls had higher self-efficacy for self-regulation. In a study of middle school science students, girls had higher achievement, higher science efficacy, and higher efficacy for self-regulation (Britner & Pajares, 2001). Hall and Ponton (2005) studied the mathematics self-efficacy in college freshmen and found no significant gender difference.

Pajares and Valiante (2001) studied middle school students and found that differences in writing motivation and achievement were a function of gender orientation (stereotypic beliefs), not self-efficacy. Pajares (1996b) reported that high school girls perform as capably as boys in academic tasks, but reported lower self-efficacy. They frequently were less confident and may have given up more easily. However, in a study involving college students, Greenglass, Schwarzer, Jakubiec, Fiksenbaum, and Taubert (1999), found that women had a higher ability to cope with stress, by setting and striving to achieve academic goals.

Self-Efficacy Predicts Outcomes

According to Bandura (1997), self-efficacy is cognitive and causes self-regulating decisions that determine behavior, effort, and persistence. Because (self-efficacy) belief is cognitive and not the same as overt behavior, self-efficacy can be measured separately from performance behaviors and results. Therefore, self-efficacy can be used to predict behavior, effort, persistence, and results.

Scope

The scope of this research has been limited to measuring self-efficacy of first-term students at the College with the intent to determine the extent of the relationship between self-efficacy and first-term GPA. Being able to identify “at-risk” students as they begin their educational effort will allow timely and efficient allocation of limited resources for early academic and social support intervention, which could take many forms including in-depth assessment, progress tracking, tutoring, advising, appropriate class assignments, study group assignments, personal counseling, and others. The strength of self-efficacy underlies outcome expectations, self-regulation, motivation, perseverance, resilience, goal-setting, and action.

Social Cognitive Theory

The College’s students represent a low-income, diverse, urban population whose life situation requires they work to generate income for housing, childcare, health maintenance,

transportation, clothing, food, and other basic living expenses. One premise of this study is that the demands of their social environment diminish the effort students commit to their academic pursuits. Bandura (1977a, 1977b) introduced his idea of social learning theory, and one of its central components, reciprocal determinism.

Reciprocal Determinism

Reciprocal determinism posits that behavior is not caused by internal traits, drives, or instincts, or by the situational influences of the environment, either individually or in combination, since each is considered to be a unidirectional determinant of behavior. Rather, human functioning, in social learning theory, is determined by the continuous reciprocal interaction of personal (cognitive), behavioral (affective), and environmental factors. In social learning theory (Bandura, 1977a, 1977b), determinism means individuals' actions are caused by events related to the individual. People produce actions purposefully, not just as a reaction to the external stimulation of their environment or simply because of internal needs. In determinism, individuals' cognitive processes mediate external influences on them and determine how those influences will regulate behavior. People therefore, exercise influence and control over their behavior.

In social learning theory, environment influences how people behave, and in turn, peoples' behavior influences their environment. When people reflect on the causes and results of their past behavior, it influences what they think, what they expect, and how they will act in the future. Consequently, there is a triadic reciprocal causation between conditions (environment), personal cognitions (thinking and feeling), and behavior (actions). This premise has important implications for first-term Weld students in that much of their behavior is determined by the accepted behaviors of their social environment that appears to value employment and family obligations before formal education. As a result, the College's students tend to miss too many classes, expend too little effort in academic endeavors, and underachieve. The idea of this study was to discover if students, who had higher self-efficacy at entry, realized higher first-term academic success by taking control of their actions rather than allowing their environment to impede them.

Self-Regulated Behavior

Self-efficacy (Bandura, 1977a, 1977b, 1986, 1997) is at the core of social cognitive theory and refers to belief in one's capability. Self-efficacy ascribes and explains cognition's central role in the use of self-regulated behavior. Bandura (1997) stated, "People's level of motivation, affective states, and actions are based more on what they believe than on what is objectively true" (p. 2) and "perceived self-efficacy refers to beliefs in one's capabilities to organize and execute the courses of action required to produce given attainments" (p. 3). Self-efficacy beliefs stimulate the courses of action people select, their level of effort, their perseverance when obstacles are encountered, their resilience to adversity, how their positive and negative thoughts affect their functioning, how well they cope with stressors in their environment, and the nature and level of their accomplishments. People with high efficacy surmount challenges through the use of self-regulatory skills and greater effort, while those with

low self-efficacy tend to stop trying to succeed in the face of difficulty. Strength of self-efficacy beliefs affects emotional responses to events and susceptibility to depression (Bandura, 1997).

Efficacious individuals see difficult tasks as challenges to be mastered, are more interested in achieving goals, sustain higher effort at difficult times, and attribute failure to lack of effort or insufficient knowledge and skill. People with low self-efficacy are less confident, believe things are tougher that they actually are, and are subject to more stress and depression (Pajares & Schunk, 2001).

Perceived self-efficacy plays the key role in the causal structure of social cognitive theory in that self-efficacy beliefs work to motivate personal adaptation and change, which then influences performance (Schwarzer, 1992; Bandura, 1997). Because self-efficacy beliefs underlie peoples' choice of challenges they undertake, people contribute to how they develop and what they become by influencing the environment in which their learning occurs. Bandura (1986, 1989) asserts that human accomplishment, including the acquisition of knowledge and competencies, requires an optimistic sense of personal (General) self-efficacy because social realities are replete with impediments, adversities, failures, setbacks, and inequities. Bandura (1989) said, "Optimistic self-appraisals of capability raise aspirations and motivation in ways that enable people to get the most out of their talents" (p. 7).

Self-Regulation and Motivation

Zimmerman (1990) described self-regulated learners as learners who have the initiative to plan, set, renew, and achieve learning goals, self-monitor and self-evaluate, be self-starters, persist in their learning activities, and have high self-efficacy. Zimmerman, Bandura, and Martinez-Pons (1992) found that stronger self-efficacy better motivates students' self-regulating behaviors such as academic goal setting. The authors determined that more challenging goals were attempted by those with stronger measures of self-efficacy.

Few teachers help students learn self-regulation skills such as goal setting, study strategies, and self-monitoring (Zimmerman, 1998, 2002). Students are usually not asked to evaluate their own work or to estimate their new skill level. They are not engaged in assessing their own self-efficacy or level of motivation for a designated activity or for specified outcomes. Students with high ability for self-regulation can use, modify, and internalize self-learning practices, but they must have enough belief in their General academic capability in order to be motivated to do so.

Methodology

The study was concerned with understanding the relationship between self-efficacy of entering students and their first-term academic success in an urban career college. The study validated a self-report instrument that was used to measure the self-efficacy of a sample of first-term students. The instrument was administered at the beginning of the student's first term. Data regarding academic success (fist-term GPA) were collected after the end of the first term for each student in the sample.

Sample

The study involved N =194 first-term day and evening students, n=66 males (34%) and n=128 females (66%). All students were visited in a required first-term class by the researcher. Students attending class on the day of the class were invited to participate in the study. All such classes were visited during the first two weeks of the term in an attempt to acquire as many subjects as possible.

Data Collection Procedures

After a self-introduction by the researcher, students who attended the first-term class during the first week of the term were given a complete explanation of the study including its purpose, procedures, use of results, and confidentiality.

First-Term Student Questionnaire

Students present were asked to voluntarily participate by completing the self-efficacy instrument, which was entitled *First-Term Student Questionnaire* and to sign an Informed Consent Form before completing the 20-item instrument (Appendix A). Virtually all eligible students present agreed to participate and completed the instrument, which took approximately eight minutes. Classes were visited a second time at the next class session (during the first or second week of the term) by the same researcher to acquire additional respondent's surveys.

Confidentiality

Instructors were informed in advance of the visits and were instructed not to provide students with any preliminary information. All instruments were distributed and collected only by the researcher. All instruments were promptly removed from the classroom and taken off premises. No students saw the instrument before or after completing it. No student was asked to complete a second instrument or to change any responses. Student names or identification numbers were required to collect GPA and demographic data from the official student database.

Achievement and demographic data collection

Respondents had their GPA data collected during the third week of their second term. The data were collected by the same researcher with permission from the college to use the data for the research project. Age and gender data (independent variables) for each student in the sample were also collected.

Data Analysis

In addition to the factor analysis performed on the data from the instrument, the primary statistical technique used to analyze Research Question 1 was step-wise regression. The demographic variables of age and gender were forced into the regression equation and, after entering age and gender, the multiple correlation (R) was evaluated. The General and Specific self-efficacy variables were then forced into the regression equation to determine the extent to which they significantly increment the explanation of the variation in GPA, the dependent variable.

Research Question 2 analyzed the relationships between General self-efficacy and Specific self-efficacy attributes using Pearson's product-moment correlation. The statistical significance of the relationships was determined and effect sizes (r^2) were calculated and interpreted. Question 1 was then analyzed to determine if the General or Specific items were more effective in explaining outcome variation than the demographic variables.

Findings

Descriptive Data: Age and Gender

Table 1
Descriptive statistics for age and gender

	Frequency	Percent
Age (n = 122)		
<21	46	38
≥21	76	62
Gender (N = 194)		
Male	66	34
Female	128	66

Age

While the sample included a total of N = 194 cases, age data were not available for n = 72 cases, yielding a total of n = 122 cases which were used in the multiple regression analysis. In this sample, 62% of the n=122 students who had age data in their database record were students 21 or more years old. Age was considered an independent variable to determine if older students were more academically successful.

Gender

In this sample of $N = 194$ first-term students, approximately two thirds (66%) were female. This percentage was a reflection of who happened to be in class when the data were collected during the first two weeks of the term. Gender was used as an independent variable to determine if academic success was related to gender for this sample.

Grade Point Average

In the *First-Term Student Questionnaire*, a 4-point scale was used for consistency because the first 10 items (Schwarzer, 1992), which measure General self-efficacy, used that scale. Items 1-10 assessed General self-efficacy and items11-20 assessed Specific self-efficacy. Items 11-20 were written to add specificity based on the literature review and a focus group discussion. Table 2 displays descriptive date for GPA.

Table 2
Descriptive Data for Dependent Variable: GPA

Variable	Range	Mean	Standard Deviation
GPA	($n = 192$) 0 - 4.00	2.40	1.30

GPA is a 0 - 4.0 scale and the mean GPA for the first-term students sampled was 2.40. This is the high end of average in a 4.00 - point scale.

Factor Analysis

The factor analysis was run to examine the construct validity of the set of items on the instrument. The 20 General and Specific self-efficacy items were factor analyzed to determine meaningful subsets of items that could be considered dimensions of self-efficacy. A total of five factors were derived that accounted for 51.78% of the variance. Of those five factors, two were meaningful and reliable. Factor I was called **General** self-efficacy because the items refer to the capability to cope with, and effectively solve, a wide variety of difficult and unexpected generalized problems in life which require substantial effort to achieve a goal. Students rating these items highly feel that they can resolve their life problems, even when they are opposed by others or must find unique ways to get what they want.

Factor II was called **Specific** self-efficacy because the items are specifically linked to academic issues such as time management, schedule conflicts, managing money, homework, attendance, and grades. Students who rated these items highly believe they can manage their stress, health, and behavior well enough to be academically successful and, as a consequence, obtain a good position when they graduate.

An oblique rotation was performed in the factor analysis. The correlation between the axis system defining the factors was found to be $r = .29$. Therefore, the factors were considered

to be relatively independent. Table 3 contains the factor names, General and Specific, the item stems that define the factors, and the factor loadings.

Reliability

Cronbach's alpha internal consistency reliability index was generated for the data from the set of items defining each factor. For Factor I, General self-efficacy, the reliability was .75 and for the Specific self-efficacy items, the alpha reliability was .73. Thus, it can be concluded that the data obtained for the two sets of items defining the respective factors were reliable.

Table 3
First-term Student Questionnaire: Principal-Component Analysis with Oblique Rotation (*N* = 191)

	Item	Stem	Loading
Factor I General Self-efficacy	8	When I am confronted with a problem, I can usually find several solutions.	.71
	4	I am confident that I could deal. effectively with unexpected events	.69
	9	If I am in trouble, I can usually think of a solution.	.58
	7	I can remain calm when facing difficulties because I can rely on my coping abilities.	.57
	6	I can solve most problems if I invest the necessary effort.	.54
	10	I can usually handle whatever comes my way.	.51
	5	Thanks to my resourcefulness, I know how to handle unforeseen situations.	.50
	2	If someone opposes me, I can find the means and ways to get what I want.	.46
	1	I can always manage to solve difficult problems if I try hard enough.	.39
		Continued	
Factor II Specific	16	I will choose school over work if schedules conflict.	.78

Self-efficacy	18	I am positive I can earn enough money to keep attending	.57
	19	I know I will get a good position when I graduate if I do well.	.57
	17	I will always find a way to get to class.	.53
	13	I am certain I can find the time to do all my homework.	.40
	15	I am certain I can control the stress in my life so I can do well in school.	.39
	20	I will take care of my health so I can achieve better grades.	.32

Research Question 1

Research question 1: *To what extent and in what manner can self-efficacy explain variation in grade point average (GPA) after controlling variation due to gender and age?*

Table 4

GPA Regression for Age, gender, and Self-Efficacy (n = 120)

Variable	*R*	R^2	Beta	*t*	*p*
Block 1	.10	.01			
Age			.09	1.02	.31
Gender			.03	-.28	.78
Self-efficacy					
General	.25	.06	**.23**	2.60	**.01**
Specific	—	—	—	—	—

Note. Specific self-efficacy did not enter the regression equation.

Research question 1 was analyzed using step-wise multiple regression. To control for variation in self-efficacy due to age and gender, these two variables were first forced into the regression equation. After entering age and gender as a set of variables, the General and Specific self-efficacy variables were entered to determine if they incremented the amount of variance explained in GPA. The data in Table 4 indicate that only 1% (R^2) of the variation in GPA was explained by the control variables, age and gender (F = .58, p=.56). General self-efficacy incremented the amount of variance explained in GPA by 5%, resulting in a total of 6% of the variation explained in GPA, which was statistically significant (F = 6.76, p < .01). Using Cohen's guidelines, the effect size of this correlation is considered to be in the small to medium range (Cohen, 1988; Huck, 2004).

Research Question 2

Research question 2: *What is the relationship between General self-efficacy and Specific self-efficacy attributes?* The correlation between the General self-efficacy and Specific self-efficacy variables was statistically significant ($r = .42$, $p < .001$). The effect size for this correlation is calculated as $r^2 = .18$, which is considered medium using Cohen's guidelines (Cohen, 1988; Huck, 2004). Therefore, it can be reasonably concluded that 18% of the variance in General self-efficacy is associated with variability in Specific self-efficacy.

Summary and Conclusions

Summary

This study started with the recognition that private for-profit career education is a growth industry that attracts low-income, urban, adult students who value a relatively fast credentialing experience that leads to employment and continuing income. Almost all students receive financial aid in the form of loans which they agree to pay back after graduation. Students do not come to a post-secondary career school to become an educated person in the traditional way. When they arrive, very few see themselves attending a four-year college or going to graduate school. Students often arrive with underdeveloped academic skills and, to a large extent; they rely on their personal belief that they have the capability (self-efficacy) to succeed.

Many students come from dysfunctional families, dangerous neighborhoods, and have chronic physical, emotional, and mental health problems. Too many are experiencing the stress of poverty, sometimes resulting in personal abuse and homelessness. Too many are parents who cannot effectively support and care for their children. Many of these men and women have adopted confrontation as their only strategy for dealing with interpersonal conflict - they fight well, verbally and physically.

Most have jobs or are looking for one because they need money. Many students must justify taking the time to attend classes when they could be working to help support their family. Many students have serious learning skill deficiencies because they previously earned only a GED or a high school diploma from a school in a poor, urban area plagued with barriers to learning achievement. In addition, a large percentage of students went to high school in other countries. While the majority of students speak multiple languages, their English literacy is lower than needed, both written and spoken. The personal objective of the typical career school student is to get a good paying job as fast as possible.

The primary intention of this study was to determine the relationship between General self-efficacy and first-term academic success in a career college serving a diverse, urban, low-income population. Being able to identify entering first-term students who are potentially at-risk of poor academic performance or failure resulting in withdrawal is incorporated in this intention. Early identification of students who need additional support to succeed would allow targeted and efficient deployment of available institutional resources. Effective academic resource allocation to at-risk students would benefit the institution and its students by reducing achievement-related failures and withdrawals which may lead to increased graduation rates.

Given these intentions, the central goal of this study was to determine the relationship between self-efficacy (Bandura, 1986, 1987, 1997; Schwarzer, 1992, 1993, 2005) and academic

success, defined as GPA performance for low-income, first-term students in an urban career college. An additional related goal was to determine the relationship between General and Specific self-efficacy in that much of the literature suggests that predictability of performance improves as self-efficacy measures become more specific (Bandura, 1977, 1986, 1997; Pajares, 1996a, 1996b).

Another goal was to determine the extent to which age and gender was related to GPA achievement. Many previously cited studies of self-efficacy in elementary and middle school have amply demonstrated that boys have higher self-efficacy than girls for math and science subjects and girls have higher self-efficacy than boys in subjects such as English and music (Bandura, A., Barbaranelli, C., Caprara, G., & Pastorelli, C. 2001; Bussey & Bandura, 1999; Pajares, 2002). However, there were no studies found of the relationship between age, gender, self-efficacy, and academic success for an urban, career college, adult population. It was a goal of this study to determine if its findings were consistent with previous studies.

Conclusions

Age and Gender

Age and gender are not related to success at the study's College for this sample $N = 194$. Based on the results of the multiple regression analysis, the percent of the variance explained (i.e. R^2) by the set of variables: age and gender is 1% for GPA.. It was expected that students 21 years old and older might be more successful than students less than 21 years old, but that result was not found. Gender was also found not to be significant as a predictor of GPA. Age and gender appear to be reduced or eliminated as an explanation of academic performance, which is consistent with findings from previous research (Bouffard-Bouchard, 1990; Mitchell, 1993; Pajares & Miller, 1994; Bong, 1997; Pajares & Graham, 1999; Pajares & Valiante, 1999; Schunk & Pajares, 2001; Pajares, 2003).

General Self-Efficacy and GPA

A finding was that when the regression analysis for GPA was examined, the set of three variables: age, gender and General self-efficacy, explained 6% of the variance ($R^2 = .06$). This means that after controlling for age and gender ($R^2 = .01$), students' perceptions of their General self-efficacy, or their optimistic belief in their personal capability to solve problems and achieve intended goals was responsible for incrementing the explanation of variation in GPA by 5% ($p < .01$) beyond the variance explained by age and gender. This result is statistically significant and somewhat practical. While the amount of variation explained is small, it can be qualitatively described as a "small to medium" effect size based on Cohen's guidelines. It can be concluded that, to some extent, General self-efficacy was related to first-term academic success.

Specific Self-Efficacy and GPA

Specific self-efficacy was also related to GPA achievement. At the $p < .05$ level, the correlation of General self-efficacy with GPA ($r = .18$) and the correlation of Specific self-efficacy with GPA ($r = .17$) were nearly the same with General having only a slightly higher correlation. Additionally, the correlation between General self-efficacy and Specific self-efficacy derived in

the factored item subsets was $r = .42$ ($p < .001$), generating a medium effect size, based on Cohen's guidelines. The General and Specific self-efficacy factors had a strong and significant relationship. However, once the General self-efficacy regression analysis explained the variance in GPA, Specific self-efficacy was unable to increase the explanation of variance in GPA further. From a practical point of view, General and Specific self-efficacy were equally related to grades.

Limitations/Delimitations

Sample

The population sampled was racially and ethnically diverse. Many Weld students were raised in Caribbean, African, European, Asian, and Middle Eastern countries and most students spoke multiple languages. The *GSE* is available in 29 languages, but not in every language. All students spoke English, but a weakness in the study was that students' English grammar was not always equivalent to that taught in United States schools. Students, whose primary language is not English, may have had problems reading or interpreting items. The English version of the *GSE* has been validated and widely used (Jerusalem & Schwarzer, 1986, 1992).

This study is limited to first-term Weld students, virtually all of whom came from low-income environments, and does not apply to students in other academic terms or students in other types of schools, such as public community colleges. As a result of this study, there may be implications that apply to for-profit career colleges, or other career colleges in urban areas in the United States, or to urban community colleges, but further research is needed to confirm this study's findings and their application to other populations and settings.

Participation

Not every first term student had the opportunity to participate in the study. Only those who attended class on the days that classes were visited by the researcher during the first two weeks were invited to participate. For practical reasons, there was no effort made to contact students who were not available during class visits.

Perception Accuracy

Students tend to overestimate their academic ability (Pajares, 1996b). Consequently, first-term student's appraisals of their own capability made at the start of the term may not be perceived accurately and they may have overestimated their anticipated academic performance. Bandura (1986) indicates that those with perceived high self-efficacy select more challenging tasks and goals which could negatively impact academic success because their actual academic ability may not be up to the unknown challenge.

Contextual Causation

It is also possible that a student's self-efficacy, self-regulation, and academic performance could have improved during the term because of superior teaching and mastery experiences, peer modeling, social persuasion, emotional growth in a college educational situation or a combination of these, and other sources of self-efficacy information. In such a case, first-term academic success may be, in part, a function of the student's learning and personal development during the first term rather than solely their self-efficacy level at the beginning of the term. Self-efficacy was not measured a second time at the end of the term, which would have provided additional insight into this issue.

References

Bandura, A. (1977a). Self-efficacy: Toward a unifying theory of behavioral change. *Psychological Review*, 84, 191-215. Retrieved October 3, 2006 from http://www.des.emory.edu/mfp/bandurapubs2.html

Bandura, A. (1977b). *Social learning theory*. Upper Saddle River, NJ: Prentice Hall.

Bandura, A. (1986). *Social foundations of thought and action: A social cognitive theory*. Upper Saddle River, NJ: Prentice Hall.

Bandura, A. (1989). Regulation of cognitive processes through perceived self-efficacy. *Developmental Psychology, 25*, 729-735. Retrieved from http:// www.des.emory.edu/mfp/Bandura1989.html

Bandura, A. (1993). Perceived self-efficacy in cognitive development and functioning. *Educational Psychologist*, 28(2), 117-148. Retrieved March 27, 2006 from http://homepages.utoledo.edu/kpugh/motivation _project /resources/bandura93.pdf

Bandura, A. (1997). *Self-efficacy: The exercise of control*. New York: W. Freeman.

Bandura, A. (2001). Social cognitive theory: An agentic perspective. *Annua*l *Review of Psychology*, 52, 1-26. Retrieved January 22, 2006 from http://0-web16.epnet.comhelin.uri.edu/citation.asp?tb=1&ua=bo+B%5FJN+1st+A%2DV.

Bandura, A., Barbaranelli, C., Caprara, G., & Pastorelli, C. (1996). Multifaceted impact of self-efficacy beliefs on academic functioning. *Child Development*, 67, 1206-1222. Retrieved September 25, 2006 from the Professional Development Collection database.

Bandura, A., Barbaranelli, C., Caprara, G., & Pastorelli, C. (2001). Self-efficacy beliefs as shapers of children's aspirations and career trajectories. *Child Development, 72*, 187-206. Retrieved September 25, 2006 from the Professional Development Collection database.

Bong, M. (1997). Generality of academic self-efficacy judgments: Evidence of hierarchical relations. *Journal of Educational Psychology*, 89, 697-708. Retrieved February 4, 2006 from http://www.questa.com /PM.qst?action=print&docId=96502657

Britner, S., & Pajares, F. (2001). Self-efficacy beliefs, motivation, race, and gender in middle school science. *Journal of Women and Minorities in Science and Engineering, 7*, 271-285. Retrieved March 10, 2006 from http://64.233.179.104/u/emory?q=cache:Tpi8jCaXAW8J:des.emory/mfp/ BP2001JW…

Cohen, J. (1988). *Statistical power analysis for the behavioral sciences* (2nd ed.). Hillsdale, NJ: Lawrence Erlbaum Associates.

Greenglass. E., Schwarzer, R., Jakubiec, D., Fiksenbaum, L., & Taubert, S. (1999). *The proactive coping inventory (PCI): A multidimensional research instrument.* Retrieved

March 12, 2006 from http:// 64.233.179.104/search?q=cache:tCq46NH3dskJ:www.psych.yorku.ca/greenglass/pci…

Hall, M., & Ponton, M. K. (2005). Mathematics self-efficacy of college freshman. *Journal of Developmental Education, 28*, 26-32.

Howell, C. L. (2001). *Facilitating responsibility for learning in adult community college students* (ERICEDRS 20010301). ARC Professional Services Group (ERIC Processing and Reference Facility) ED Contract No.R189002001. (ERIC Number: ED451841) Retrieved September 19, 2004 from http://66.218.69/search/cache?pl=howell+facilitating+ responsibility+for+learning+in+a…

Huck, S. W. (2004). *Readings Statistics and Research*, (4th ed.). Boston, MA: Pearson Education Inc.

Jerusalem, M., & Schwarzer, R. (1992). Self-efficacy as a resource factor in stress appraisal processes. In R. Schwarzer (Ed.), *Self-efficacy: Thought control of action* (pp. 195-213). Washington, DC: Hemisphere.

Pajares, F. (1996a). *Assessing self-efficacy beliefs and academic outcomes*:*The case for specificity and correspondence*. Paper presented at the annual meeting of the American Educational Research Association, New York. Retrieved September 17, 2005 from http://www.des.emory.edu/mfp/aera2 .html

Pajares, F. (1996b). Self-efficacy beliefs in academic settings. *Review of Educational Research*, 66(4), 543-578. Retrieved March 23, 2006 from http://www.des.emory.edu/mfp/PajaresSE1996.html.

Pajares, F. (1997). Current directions in self-efficacy research. In M. Maehr & P. R. Pintrich (Eds.), *Advances in motivation and achievement*,10,1-49. Greenwich, CT: JAI Press. Retrieved September 19, 2004 from http://www. emory.edu/EDUCATION/mfp/effchapter.html

Pajares, F., Miller, M. D., & Johnson, M. J. (1999). Gender differences in writing self-beliefs of elementary school students. *Journal of Educational Psychology*. Retrieved March 10, 2006 from http://www.des.emory.edu/ mpf/PMJ1999EdP.html

Pajares, F., & Schunk, D. H. (2001). Self-beliefs and school success: Self- efficacy, self-concept, and school achievement. In R. Riding & S. Rayner (Eds.), *Perception* (pp. 239-266). London: Ablex Publishing. Retrieved March 9, 2006 from http:// des.emory.edu.mpf/PajaresSchunk 2001.html.

Pajares, F., & Valiante (2001). Gender differences in writing and motivation and achievement of middle school students: A function of gender orientation. *Contemporary Educational Psychology, 26*, 366-381. Retrieved January 18, 2006 from http://www.idealibrary.com.

Pajares, F., Hartley, J., & Valiante, G. (2001). Response format in writing self-efficacy assessment: Greater discrimination increases prediction. *Measurement and Evaluation in Counseling and Development*, 33, 214-221. Retrieved August 24, 2006 from http://www.des.emory.edu/mfp/ SE-Guide2005.html.

Schwarzer, R., (Ed.) (1992). *Self-efficacy: Thought control of action*. Washington, DC: Hemisphere.

Schwarzer, R. (1993). *Measurement of perceived self-efficacy. Psychometric scales from cross-cultural research*. Berlin, Germany: Freie Universitat Berlin. Retrieved March 29, 2006 from http://userpage.fuberlin .de/~health/ world14.htm

Schwarzer, R. (2005). *Everything you always wanted to know about the self- efficacy scale but were afraid to ask*. Retrieved September 17, 2005 from http://userpage.fu-berlin.de/~health/faq-gse.pdf

Schwarzer, R., & Jerusalem, M. (1993a). *General perceived self-efficacy scale*. Retrieved March 30, 2006 from http://web.fu-berlin.de/gesund/skalen/ Language_Selection/Turkish/General_Perceived_Sel…

Wigfield, A., & Guthrie, J. T. (1995). *Dimensions of children's motivation for reading : An initial study*. National Reading Research Center: U.S. Department of Education, Office of Educational Research and Improvement, Educational Resources Information Center (OCLC:34952973). Retrieved March 10, 2006 from http://curry.edschool.verginia.edu/go/clic/nrrc/mrq_r34.html

Zimmerman, B. J. (1998). Academic studying and the development of personal skill: A self-regulatory perspective. *Educational Psychologist, 33*, 73-86. Retrieved September 25, 2006 from the Academic Search Premier database.

Zimmerman, B. J. (2002). Becoming a self-regulated learner: An overview. *Theory into Practice, 41*, 64-70. Retrieved January 22, 2006 from http://0-web16.epnet.com.helin.uri.edu/citation .asp?tb=1&_ua=bo+B%5FJN+1st+A%2DV...

Zimmerman, B. J., Bandura, A., & Martinez-Pons, M. (1992). Self-motivation for academic attainment: The role of self-efficacy beliefs and personal goal setting. *American Educational Research Journal, 29*, 663-676

Appendix A

FIRST-TERM STUDENT QUESTIONNAIRE

Clearly print your name: _____
Your signature: _____
Your social security/ student number is: _____
Term Code: _____

Directions: For each of the twenty items below, write one number
(1, 2, 3, or 4) from the choices listed that best describes your response. Put your choice in the spaces provided. Please answer every item. The choices are:

1 = Not at all true
2 = Hardly true
3 = Moderately true
4 = Exactly true

Hand in your completed questionnaire when you have finished writing your answers.

1. I can always manage to solve difficult problems if I try hard enough _____
2. If someone opposes me, I can find the means and ways to get what I want_____
3. It is easy for me to stick to my aims and accomplish my goals_____
4. I am confident that I could deal efficiently with unexpected events_____
5. Thanks to my resourcefulness, I know how to handle unforeseen situations_____
6. I can solve most problems if I invest the necessary effort ____
7. I can remain calm when facing difficulties because I can rely on my coping abilities_____
8. When I am confronted with a problem, I can usually find several solutions_____
9. If I am in trouble, I can usually think of a solution. _____
10. I can usually handle whatever comes my way _____
11. I am certain I can manage the problems in my life so I can focus on my studies_____
12. I am certain I can obtain financial aid to pay tuition_____
13. I am certain I can find the time to do all my homework_____
14. I'm certain my family and friends want me to succeed in college_____
15. I am certain I can control the stress in my life so I can do well in school_____
16. I will choose school over work if schedules conflict_____
17. I will always find a way to get to class _____
18. I am positive I can earn enough money to keep attending____
19. I know I will get a good position when I graduate if I do well_____
20. I will take care of my health so I can achieve better grades_____

Thank you.