

10-2013

# The Relationship Between Self-Efficacy and Persistence in Adult Remedial Education

Carol L. Holmquist

*Johnson & Wales University - Providence*, CLH064@wildcats.jwu.edu

Robert K. Gable

*Johnson & Wales University - Providence*, rgable@jwu.edu

Felice D. Billups

*Johnson & Wales University - Providence*, fbillups@jwu.edu

Follow this and additional works at: [https://scholarsarchive.jwu.edu/k12\\_ed](https://scholarsarchive.jwu.edu/k12_ed)



Part of the [Education Commons](#)

---

## Repository Citation

Holmquist, Carol L.; Gable, Robert K.; and Billups, Felice D., "The Relationship Between Self-Efficacy and Persistence in Adult Remedial Education" (2013). *K-12 Education*. 22.

[https://scholarsarchive.jwu.edu/k12\\_ed/22](https://scholarsarchive.jwu.edu/k12_ed/22)

This Conference Proceeding is brought to you for free and open access by the Center for Research and Evaluation at ScholarsArchive@JWU. It has been accepted for inclusion in K-12 Education by an authorized administrator of ScholarsArchive@JWU. For more information, please contact [jcastel@jwu.edu](mailto:jcastel@jwu.edu).

**The Relationship Between Self-Efficacy  
and Persistence in Adult Remedial Education**

**Carol L. Holmquist**

**Robert K. Gable**

**Felice D. Billups**

**Center for Research & Evaluation  
College of Arts & Sciences  
Johnson & Wales University**

---

Paper presented at the 44<sup>th</sup> annual meeting of the Northeastern Educational Research Association, October 24, 2013, Rocky Hill, CT.

# **The Relationship Between Self-Efficacy and Persistence in Adult Remedial Education**

## **Key Words**

Self-efficacy, academic self-efficacy, persistence,

## **ABSTRACT**

Persistence in remediation as preparation for higher education continues at less than 50%. Self-efficacy may be a barrier influencing persistence and, therefore, successful academic preparation. This study at a non-profit adult education site establishes a relationship between general self-efficacy and academic self-efficacy. The survey ( $N=75$ ) investigated demographic characteristics related to general self-efficacy, academic confidence, motivation, and persistence. There was no significant correlation between the demographic characteristics and general self-efficacy, academic confidence, motivation, or persistence, nor was there any significant correlation among the variables except for general self-efficacy and academic confidence, which did have a significant correlation ( $r=.56$ ,  $r^2=.32$ ,  $p<.001$ ). These findings may contribute to practice and policy in the area of adult remediation in preparation for higher education and employment skills training.

## **Study Purpose**

The purpose of this study was to investigate the relationship between self-efficacy and persistence in adult remedial education. Addressing barriers that inhibit persistence has been a recurring strategy focused on issues such as academic readiness, financial aid, child care, and employment (Long & Kurlaender, 2009). Even when these barriers are mitigated, a large percentage of remediating adults do not persist in their course of preparation. This study sought to determine if lack of self-efficacy was a barrier to persistence.

## **Literature Review**

### **Introduction**

College readiness for under-prepared students includes not only basic skills but sufficient self-efficacy to persist in the course of study toward graduation or transition to employment (Brent et al., 2005; Labaree, 2006; Pascarella & Terenzini, 1991). 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). In addition to those who have not completed high school, remediation in basic skills is needed for a large proportion of high school graduates and for adults who need to retrain themselves as a global economy changes the very nature of unskilled work (Kirst & Venezia, 2004; Waycaster, 2001). After the advent of open enrollment at community colleges in the 1980s and 1990s, a process transformed the remediation of basic skills into a highly specialized field called Developmental Education with new curricula and services aimed at retention and successful completion of postsecondary education goals (Boylan, Bliss, & Bonham, 1997; Boylan & Bonham, 2007; Saxon & Boylan, 2001). This study reviews academic remediation as preparation for post-secondary education or employment with an emphasis on the impact of self-efficacy on persistence in remediation (Bandura, 2001, 2012; Becker & Gable, 2009; Maddux, 1995; Schunk & Pajares, 2002; Schunk 1996; Schwarzer, 1995; Zimmerman, 1995). It indicates that there is a need for systematic research that will contribute to an understanding of the impact of self-efficacy on persistence during remediation. Additionally it suggests that academic-efficacy should be studied specifically as a contributing barrier to adult education student persistence.

### **Higher Education Retrospective**

From America's earliest days, priming democratic ideals to organize communal life, govern life together, and educate each successive generation was the purview of higher education (Gutmann, 2008). "There can be little doubt that the conflict between market based utilitarianism and the liberal arts tradition of education for understanding

democratic citizenship has been an important touchstone in the American context” (Brint, Riddle, Bicakci, & Levy, 2005, p. 70). Following the post-industrial era, higher education began to focus more on career preparation and less on liberal arts, a trend which is ironically reversing as, “employers are urging more and better liberal education, not less” (AACU, 2007, p. 16). Preparation of students for this essential body of study in analytical, creative, and civic responsibility remains a key element of American higher education and the gateway to self-sustaining adults capable of what Gutman (2008) referred to as the basic reasoning and communication skills needed to function in the support of a society that educated its young, governed its activities, and protected its resources for a common good. Since higher education had become more universally utilized as the pathway to employment, this role of gateway had to include not only the liberal arts, the expansion of new scientific and technological knowledge but, as a practical matter, it had to include the remediation of adults underprepared for entry into the process (Labaree, 2006; Newman, Couturier, & Scurry, 2004). Though it included a place for remediation of underprepared students, higher education was unprepared for the significant change by 2009 in enrollment which included 40% of its students being within the community college system, 42% being over 24 year old, and 41% being employed at least part-time (College Board, 2011 Tables 2 & 4; National Center for Educational Statistics, 2011).

### **Remediation as a Return on Investment**

A case for remedial education as an investment with a long term return has been made based on the economic impact of employability and higher wages for post-secondary educated adults. According to a recent study (Symonds, 2011), 35 years ago

70% of the workforce was composed of adults with only a high school education or less, over 30% had not completed high school, a figure which has currently risen to 40%, and only 28% continued on to higher education. Meanwhile, “Over the past third of a century, all of the net job growth in American has been generated by positions that require at least some post-secondary education” (p. 2). Given that the current job market requires at least some post-secondary education and over 40% of American adults are underprepared to enter post-secondary education, a demand for remediation for these adults is very clear. The U.S. Department of Education concurs (National Center for Public Policy, 2010; Russell, 2008), however, according to Bailey (2009), “developmental education as it is now practiced is not very effective in overcoming academic weaknesses, partly because the majority of students referred to developmental education do not finish the sequences to which they were referred” (p. 12). According to Bailey, for students who enter community college needing developmental education in one or more subjects, less than 25% complete the sequence and enter college level work suggesting that remediation is not closing the gap.

### **The Effectiveness of Remediation**

Remediation is cost effective if the student enters college level work because the graduation rate for remediated students is as high as that of students who do not need remediation (Calcagno, 2008; Symonds, 2011; Waycaster 2001). For those who do complete their course of remediation and progress into credit bearing higher education, there is a return on investment even if the student completes only one year of higher education (Calcagno, 2008, p. 23). However, Bueschel, (2004); Hummel-Rossi &

Ashdown (2002); Johanson, (2010); Kirst & Venezia, (2004); and Russell, (2008) cautioned that just enrolling in basic skill remediation whether in an Adult Education Center or Community College did not guarantee that the student would flourish within higher education. Support and enhancement is necessary in addition to basic skills to improve the chances of success for students who are still struggling to prepare for college level work (Zavarella, 2009). Students who made it through remediation and into college did experience the “social as well as economic return on investment” (Symonds, 2011, p. 38), however, there was little research on how students successfully navigated remediation to access and complete higher education.

### **Barriers to Success**

There are environmental factors that negatively impact the ability of an adult student to utilize remediation as preparation for higher education. Though there have been studies regarding barriers such as academic readiness, financial resources, child care, and employment (Boylan, 2008; Boylan, Bliss, & Bonham, 1997; Boylan & Bonham, 2007; Bueschel, 2004; Roueche, Roueche, & Ely, 2001; Roueche & Waiwaiole, 2009) and studies of programs that increased retention and even graduation (Hearn & Holdsworth, 2002; Kuh, Kinzie, Schuh, Whitt, & Associates, 2005; Levin, Cox, Cerven, & Haberler, 2010), low persistence continued to be normative, raising the question of what other obstructing barriers might need to be explored through additional research.

For students who are educationally underprepared, the complexities of support might need to include assessment, advising, individualized tutoring, study skills, learning strategies, critical thinking, and case management that addresses the cognitive

and affective needs of the learner (Bahr, 2007; Bailey, 2009; Boylan, 2008; Boylan, Bliss, & Bonham, 1997; Boylan & Bonham, 2007; Doinger, 2009; Goldrick-Rab, 2010; Pascarella & Terenzini, 2005). Additional research is needed to address the impact of supporting students with more robust advising and case management (Boylan, 2008; Doinger, 2009; Saxon & Boylan, 2001). The field of development education was forty years old in 2008 and a compilation of its four major scholarly journals revealed that the topics of remediation programs, student perspectives on higher education, and resources for both programs and students shared approximately 30% each of the coverage but only one percent of writings were on such topics as student support, counseling, advisement, or issues contributing to lack of student success beyond skills remediation itself (Preuss, 2008). Adult remedial education bases its delivery on addressing the content of basic skills, while simultaneously addressing the environmental forces or barriers that negatively impact student persistence. This study examined demographic characteristics, general self- efficacy and academic self-efficacy as possible barriers to success because they may have a direct impact on persistence which, in turn, has a direct impact on successful completion of remediation.

### **Self-Efficacy**

Self-efficacy is the core construct of Bandura's Social Cognitive Theory (1977), which theorized a structure that was grounded in "triadic reciprocal causation" including intrapersonal influences, the behavior in which the individual engaged, and environmental forces that impacted the person (Bandura, 1997). "To fully understand personal causation requires a comprehensive theory that explains, within a unified conceptual framework, the origins of beliefs of personal efficacy, their structure and

function, the processes through which they operate and their diverse effects” (Bandura, 1995, p. 2). Bandura posited that, “people’s beliefs in their capabilities are developed in four ways;” these ways included “mastery experiences” that result from accomplishing tasks that were difficult; “social modeling” that resulted from seeing one’s peers successfully complete goals, “social persuasion”, which occurred when resolve to persevere was constructed from experiences of successfully completing difficult tasks, and “choice processes,” which occurred as the options that are relied upon grew with positive experiences (Bandura, 2012, p.13). Self-efficacy connects “human motivation, thought processes, and behavior” (McCoach, Gable, & Madura, 2013, p. 16). “Effective personal functioning is not simply a matter of knowing what to do and being motivated to do it....Rather efficacy is a generative capability in which cognitive, social, emotional and behavioral subskills must be organized and effectively orchestrated to serve innumerable purposes” (Bandura 1997, p. 36). Efficacy beliefs are concerned not only with the exercise of control over action, but also with the self-regulation of thought process, motivation, and affective and physiological states (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). Academic outcomes are largely influenced by student’s perceived control over their own academic behavior (internal locus of control). In

academic settings, efficacy and outcome expectations usually are related (Bandura, 1986). McCoach, Gable, & Madura (2013), citing the work of Shunk (1981); Abraham, & Bon, (2012); and Elias & MacDonald (2007), noted that many studies had determined that academic self-efficacy was positively correlated with academic performance (p. 21).

### **Self-regulation**

Self-regulation is agentic (Bandura, 2001; Zimmerman, Bandura, & Martinez-Pons, 1992) and a “self-directed processes by which learners transformed their mental abilities into academic skills” (Zimmerman, 2002, p. 65). “Students act as their own agents, proactively engaged in their own development and authors of their academic present and future” (Usher & Pajares, 2008, p. 443). Individual must believe in their capacity; they must have confidence that they were capable of success (Pajares, 2008). Bandura’s theory was applied by Miller and Rollnick (2002) in their therapeutic work with self-regulating behavioral change in substance abuse, chronic health issues and incarceration recidivism. “Self-efficacy is a key element in motivation for change and is a reasonably good predictor of treatment outcome” (Miller & Rollnick, 2002, p. 40).

“Most simply, self-efficacy can be defined as one’s perceptions of his/her ability (i.e., confidence) to successfully perform a task or behavior” (McCoach, Gable, & Madura, 2013, p.16). “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 is self-regulated through a person’s perceptions of a task and their

expectations of its successful completion (Bandura, 1995; McCoach, Gable, & Madura, 2013).

### **Motivation**

Schunk (1996) describes motivation as a useful human behavior concept that enlightens the understanding of goal directed conduct. The definition postulates that people set goals and engage in tasks cognitively (e.g., monitor goal directed progress) and behaviorally (e.g. expend effort) to attain their goals (p. 284). Though there has been much research around global achievement motive, motivation “rarely manifests itself uniformly across different achievement domains....Since the achievement motive varies with the domain, how well such a global trait predicts achievement behavior in specific situations is questionable ” (p. 294). Similarly, Bandura notes, “Self-efficacy acknowledges the diversity of human capabilities. Thus, it treats the efficacy belief system not as an omnibus trait but as a differentiated set of self-beliefs linked to distinct realms of functioning. Moreover, efficacy beliefs are differentiated across major systems of expression within activity domains” (Bandura, 1997, p. 36). One might conclude that measuring efficacy must therefore be within distinct domains or dimensions of functioning if it is to measure an individual’s exercise of control over action, self-regulation of thought processes, motivation, or affective and physiological states. It would be beneficial to have an academic-efficacy scale that measures these specific dimensions.

### **Affective & physiological states**

When Bandura (1997) suggested that efficacy is a generative capability in which cognitive, social, behavioral as well as emotional sub-skills must be organized and

effectively orchestrated toward various outcomes, he was indicating that emotional and physical conditions impact efficacy. “In short, perceived self-efficacy is concerned not with the number of skills you have, but with what you believe you can do with what you have under a variety of circumstances....Perceived self-efficacy is not a measure of the skills one has but a belief about what one can do under different sets of conditions with whatever skills one possesses” (p. 37). Pointing to beliefs about achievement, Schunk (1996) states, “The best way to promote achievement behavior is to combine a strong hope for success with a low fear of failure” (p 292). Atkinson’s (1957) often cited Expectancy-Value Theory postulates that it is the emotional conflict between success and failure that instigates achievement behavior. “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 findings 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).

### **Self-Efficacy and Persistence**

It is universally held that in adult remedial education, the acquisition of the basic skills needed to pursue post-secondary study is dependent on persistence (Attewell, et al. 2006; Bahr, 2007; Bailey, 2009; Boylan, et al.1997; Bueschel, 2004; Calcagno & Long, 2008; Cofer & Somers, 2001; Comings, et al. 2004; Goldrick-Rab, 2010; Hummel-Rossi & Ashdown, 2002; Levin & Calcagno, 2008; McCabe, 2003; Nash & Kallenbach, 2009; Stampen & Hansen, 1999; Waycaster, 2001). Despite this dependence, persistence for community college adult remedial education participants is at approximately 50% (Bailey, Jeong, & Cho, 2009). A regional Department of Education

attendance data for adult remedial education also indicates the persistence level was also approximately 50%. This study sought to determine if there was a relationship between self-efficacy and persistence that might be informative to those interested in students' successful completion of adult remedial education.

In Motivational Interviewing research (Arkowitz, Westra, Miller, & Rollnick, 2008; Miller & Rollnick, 2002)) regarding mitigating detrimental behaviors the relationship of motivation to persistence and the confidence that persistence would result in success was a key corollary. "A general goal of motivational interviewing is to enhance the client's confidence in his or her capability to cope with obstacles and to succeed in behavioral change (Miller & Rollnick, 2002, p. 41). Though no body of research corroborates this, in adult remediation, continued attendance or persistence in the program of basic skills is felt to be the key corollary of mastering those skills. By looking at other fields where motivation and confidence, which are key components of self-efficacy, had been investigated, it was hoped that a predictable association between confidence or self-efficacy and persistence might be recognized.

Zimmerman's construct of capabilities (2002) and Bandura's construct of academic self-efficacy (2012) required that the individual believe in their capacity; they had to have confidence that they were capable of success. For Miller and Rollnick (2002) the individual wishing to make a change must determine that the change is important and then secondarily that the important change is possible to make. There has to be confidence that the important change is expected; a person has to have "optimism about ability to change—in other words, self-efficacy" (p. 113).

In reviewing counseling approaches across different theoretical and clinical models (Ryan, Lynch, Vansteenkiste, & Deci, 2011) self-efficacy, motivation, and confidence were identified as central to the capacity of counseling to positively impact behavioral change. “Clearly, self-efficacy beliefs can play an important motivational role in counseling. In so far as clients lack the belief that they are capable of successfully achieving an outcome, they are unlikely to put effort into behavioral change” (p.210). Research in the field of counseling has examined self-efficacy including motivation and confidence as it relates to successful behavioral change, however, no such research is available to the field of adult remedial education where persistence as a behavior that leads to successful completion is needed.

### **Self-Efficacy Applied To Adult Remedial Education Students**

Based in emotions, affective processes are significantly influenced by environmental stressors (Bandura, 2012). According to Bandura (1977, 1986), individuals who believed they could manage stressors approached their task with a more efficacious attitude; they expected to handle the stress and successfully complete the task. Those who did not believe they could handle the stressors viewed them as uncontrollable and therefore did not expect to successfully complete the task. Affective selection processes were operationalized by individuals as they avoided or moved toward environments that challenged them or were chosen as nonthreatening. “People avoid activities and environments they believe exceed their coping capabilities” (Bandura, 1995, p. 10). Making such choices over time could develop or atrophy self-efficacy. For adult students with a history of academic failure, this could mean that belief in successfully completing academic tasks was diminished. They might not believe

themselves to be capable of success. Self-efficacy was based on an individual's beliefs about their capabilities to achieve certain outcomes such as an educational program completion. The quality of the attainment was based on how well its performance was executed which was dependent on self-regulation of motivation and action (Bandura, 2012, p. 15). "The assessment of academic self-efficacy is not confined to the belief that one can realize given levels of academic attainment. It is also measured in terms of belief in one's learning efficacy and self-regularity efficacy to manage learning activities that eventuate in academic accomplishments (p. 25).

Given the high percentage of adult students who do not complete their course of remediation, it appears that behavioral change that extends beyond skills-building is essential for persistence and, therefore, successful remediation to occur. Adult Educators search for ways to address the changes needed to move remedial students into the mainstream of higher education or workforce training, hoping to encourage change through the extra barrier removal services provided (Long & Kurlaender, 2009). Miller and Rollnick (2002) indicated that this is an inaccurate way to view change and that change was almost always going to come from within the person who wanted to change not from influences or services outside the person. Therefore, change would almost never come to a person who does not actually want to change. Change that leads to more successful academic outcomes which comes from within could be seen as the development of academic self-efficacy per the Bandura (1986) constructs or as Miller and Rollnick (2002) referred to it, confidence, (i.e., confidence in their capacity to make the change). Miller and Rollnick (2002) suggest, "ask a person how likely they feel

it is that they can change and their answer is a reasonable predictor of what will happen” (p. 5).

Applying this research to students who have had a very negative experience with prior education is appropriate. Adult students with low-academic-efficacy when engaged in remediation do not demonstrate sufficient motivation to continue in the face of difficult tasks. In their prior academic experiences, they did not have the opportunity to build experiences of tasks successfully completed. They are motivated to enroll in a remedial course of study because they want to improve basic reading and math skills, usually to be better prepared to help their children, or to prepare for the GED test which they believe will enhance their employability, or to enter higher education. Despite their motivation to enroll, persistence remains the main deterrent to progress. Seldom are students incapable of progress, even substantial progress; however, many did not stay in the program long enough to make the progress of which they were capable. They had goals to read better, to take a GED test, or enter college but they did not consistently work toward the goal and, therefore, failed to reach the goal. Their academic-confidence or academic-efficacy beliefs may have been stunted by their prior experience.

### **Self-Efficacy within Higher Education**

Higher education has changed over time in response to the needs of individuals, the workplace and most recently underprepared adults seeking remediation in order to enter its system for creating self-sustaining lives. For adult basic education students there remains a struggle with self-regulated behavior related to academic work especially when there are significant competing obstacles such as employment, child care, or remedial preparation. Academic self-efficacy regarding program completion is

inclusive of both the academic progress and management of obstacles. “Self-regulatory efficacy measures student’s beliefs that they can manage not only the cognitive demands but the social, motivational, and affective aspects of learning” (Bandura, 2012, p. 26).

“Perceived self-efficacy refers to beliefs in one’s capabilities to organize and execute the courses of action required to manage prospective situations. Efficacy beliefs influence how people think, feel, motivate themselves, and act” (Bandura, 1995, p. 2). Bandura (1977) posits that beliefs contribute significantly to human motivation and attainment and that these beliefs are based on influences including: mastery experiences, vicarious experiences provided by social models, social persuasion by someone they trusted; and enhanced emotional and physical reactions (Bandura, 2012). These influences are not just instructive or informational to the individual; they have to impact the cognitive processing of the individual person. The experiences must change the way a person thinks. When this happens, the behavioral discrepancy that Miller and Rollnick (2002) discussed is identified and an articulation of how the change could occur is understood. Discrepancy is crucial to self-regulation. When the discrepancy is apparent to the person who wishes to change, the change can be sought or applied to the desired goal (Bandura, 1995; Miller & Rollnick, 2002). Miller’s concept of confidence that a plan of action would work is equivalent to Bandura’s perceived self-efficacy. Both concepts might inform the practice of remedial adult education in preparation for higher education.

Social cognitive theory is important to those who design and administer adult remedial education because it could inform the development of assessment, practice,

and evaluation. "Social cognitive theory provides not only knowledge of predicting behavior but also a theory of learning and change" (Bandura, 2012, p. 13). Adult basic education is not only the collection of skills that are required for remediation but also the preparation by the adult student to utilize the academic and the social changes necessary to continue learning.

### **Methodology**

This study sought to investigate whether self-efficacy was related as a barrier to persistence. The study examined quantitative data ( $N=75$ ) relating to potential demographic barriers that might contribute negatively to participants' persistence. It also explored the correlation among general self-efficacy, academic confidence, motivation, and persistence. The data were then used to correlate any demographic data to general self-efficacy, as measured by the Schwarzer Scale (1995), and to academic confidence and motivation, as measured by the Miller & Rollnick Scale (2002).

### **Sample**

The sample of  $N=75$  was selected from the primary investigator's work site, a New England adult education center. Criteria for selection included all adult students with at least 12 hours of program participation and a pre-program assessment measure.

Participants completing the trimester had a post-program assessment measure.

### **Instrumentation**

Data collected for the quantitative study utilized a survey which included 10 demographic questions to identify possible barriers to persistence. The instrument also included the 10 item general Self-Efficacy Scale developed by Schwarzer (1995). The Schwarzer scale assesses a general sense of perceived self-efficacy including goal-

setting, effort investment, persistence in the face of barriers, and recovery from setbacks (Schwarzer, 2005). Additionally the survey included the two item Miller and Rollnick (2002) motivation and confidence scale. Motivation has three critical components: readiness, willingness and ability (p. 10). “*Confidence* is the term we use to describe the extent to which a person feels able to change” (p. 111).

### **Data Collection**

Survey questionnaires were completed by participants at the beginning of the first 2012-2013 trimester. Potential barriers were correlated to the Schwarzer (1995) self-efficacy measure and the Miller & Rollnick (2002) scales of motivation and confidence. Additional data included attendance (persistence) and academic progress records.

### **Data Analysis**

Survey data were analyzed using SPSS to determine correlation of the independent variables of general self-efficacy, motivation and academic confidence to the dependent variable of persistence, which for this study was based on attendance. The relationship of demographic data to self-efficacy was determined by examining the relationship between the demographic variables and Schwarzer (1995) self-efficacy scores and the Miller and Rollnick (2002) scale data. Demographic variables with two categories (e.g., male, female) were examined utilizing a *t*-test. When more than two categories of the demographic variables were available (e.g., age) analyses of variances were followed by Scheffè test, where appropriate. For all analyses the .05 level of significance was used. When there was a significant finding, effect sizes were reported.

## Results

Barriers to persistence were examined to determine if there were findings related to age, gender, marital status, employment, last K-12 grade completed, being a parent, being born in the U.S., having parents born in the U.S., and having spoken English in their childhood home. Table 1 (see Appendix) displays the *t*-test data, which relates demographic data to the dependent variables of General Self-Efficacy, Motivation, Academic Confidence, and Persistence. There was no significance relationship of the four dependent variables with being a parent, being born in the U.S.; having parent(s) who were born in the U.S.; or having spoken English in the childhood home.

Table 2 (see Appendix) displays the ANOVA results. There was no significant relationship between the four dependent variables of General Self-Efficacy, Motivation, Academic Confidence, and Persistence and the demographic variables of marital status, employment status, last grade (K-12) achieved, or age of participant.

Table 3 contains the data regarding the correlation among General Self-Efficacy, Motivation, Academic Confidence, and Persistence. There were no significant correlations between General Self-Efficacy and Motivation. Also, there was no correlation between General Self-Efficacy or Academic Confidence, and Persistence as measured by research site attendance data for the first trimester. There was, however, a significant correlation between General Self-Efficacy and Academic Confidence ( $r = .56$ ,  $r^2 = .32$ ,  $p < .001$ , large effect size).

The most important finding was the correlation between General Self-Efficacy and Academic Confidence. Efficacy beliefs are concerned not only with the exercise of control over action but also with the self-regulation of thought process, motivation, and

affective and physiological states” (p.36). Perception of being capable of controlling their educational actions and self-regulating their thinking about success, motivated their persistence and boosted their academic confidence. This finding supports Bandura’s theory; “Self-regulatory efficacy measures student’s beliefs that they can manage not only the cognitive demands but the social, motivational, and affective aspects of learning” (Bandura, 2012, p. 26).

Table 3

*Correlations Among General Self-Efficacy, Motivation, Academic Self-Efficacy, and Persistence (N=75)*

|                     | General Self-efficacy | Motivation | Academic Confidence |
|---------------------|-----------------------|------------|---------------------|
| Motivation          | .02                   |            |                     |
| Academic Confidence | .56**                 | -.02       |                     |
| Persistence         | -.20                  | -.04       | -.08                |

\*\*Significant at .001 level. The effect size,  $r^2$ , for this correlation ( $r = .56$ ) is .31 or large.

### Conclusion

The role of higher education has often been to respond to and interpret change in society, for example, at the birth of the university during the 11<sup>th</sup> century when professorial expertise and group learning was introduced; at the point that the U.S. introduced land grant universities and science and technology became a course of study; and as the 21<sup>st</sup> century dawned and the demands of the knowledge economy pushed technology into the realm of higher education. The most recent change facing higher education results from the very absence of employment that can sustain lower and middle income jobs without some post-secondary education. This change demands that the masses utilize higher education as they once utilized high school completion to prepare for employment (Benjamin, 2003). For a large percentage of those utilizing post-secondary education to prepare for employment and a self-sustaining life, remediation as preparation for study is essential.

Remedial education transforms academic skill levels in preparation for higher education, employment, and economic self-sufficiency. For many the transformation must also include an adjustment in self-efficacy which includes the capacity to manage barriers beyond remediation, financial aid, child care and employment. Because persistence in the course of remedial study is held to be a key indicator of successful post-secondary preparation, an investigation of the lack of persistence even with services that lead to barrier removal was warranted. The purpose of this study was to investigate the relationship between self-efficacy and persistence in adult remedial education. The study also investigated motivation and academic confidence as potential barriers to persistence. Based on the study it would appear that participants with both high general self-efficacy and high academic confidence have the greatest likelihood of persistence and therefor successful completion of remediation.

Adult remedial education students at the study site experienced a wide range of environmental barriers which included the results of decisions related to parenting, employment, and prior preparation that significantly impacted their capacity to persist in their course of remediation. Being the agent of their behavior as it related to their environmental barriers still allowed for the imposed environment to impact these students in ways that were beyond their control; however, Bandura (1977) indicated that how a person construed and reacted to these environmental barriers was based on self-efficacy and the confidence that they could make sense of and control their environment. "Self-regulatory efficacy measures student's beliefs that they can manage not only the cognitive demands but the social, motivational, and affective aspects of learning" (Bandura, 2012, p. 26). For that reason, looking at self-efficacy and academic

confidence as it relates to adult remedial education students may provide insight into student persistence.

### **Recommendations for Further Study**

Efficacy beliefs are concerned with four dimensions: exercise of control over action, self-regulation of thought process, motivation, and affective and physiological states” (Bandura, 1996, p.36). This study did not survey these dimensions specifically and a study that looked at these dimensions in addition to general self-efficacy could refine the more generalized dimensions of motivation and academic confidence used in this initial study. This more granular investigation would perhaps shed light on what might be more specifically termed academic-efficacy. According to Bandura (2006), “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” (p.307). A second study with a larger cohort of adult remedial study students as well as an expanded set of efficacy dimensions should allow additional insights into whether self-efficacy and specifically academic-efficacy are barriers to student persistence.

## References

- Arkowitz, H., Westra, H., Miller, W., & Rollnick, S. (2008) *Motivational interviewing: In the treatment of psychological problems*. New York, NY: The Guilford Press.
- Association of American Colleges and Universities. (2007). *Part 2: From the American century to the global century, College Learning for the New Global Century, Association of American Colleges & Universities*, 15-23.
- Atkinson, J. (1957). Motivational determinants of risk taking behavior. *Psychological Review*, 64(6) 359-372. Doi. 10: 1037/h0043445
- Attewell, P., Heil, S., & Reisel, L. (2010). Competing explanations of undergraduate noncompletion. *American Educational Research Journal*, 48(3), 536-559. doi: 10:3102/0002831210392018
- Bahr, P. R. (2007). Double jeopardy: Testing the effects of multiple basic skill deficiencies on successful remediation. *Research in Higher Education*, 48(6), 695-725. doi: 10.1007/s11162-006-9047-y
- Bailey, T. (2009). Challenge and opportunity: Rethinking the role and function of developmental education in community college. *New Directions for Community Colleges* 145, 11-30. doi: 10.1002/cc.358
- Bailey, T., Jeong, D., & Cho, S. (2009). Referral, enrollment and completion in developmental education sequences in community colleges. Community College Research Center Working Paper No. 15. Teachers College, Columbia University. Retrieved from: [ccrc.tc.columbia.edu/media/K2/ attachments/referrals-enrollment-completion-developmental.pdf](http://ccrc.tc.columbia.edu/media/K2/attachments/referrals-enrollment-completion-developmental.pdf)
- Bandura, A. (1977). Self-efficacy: Toward a unifying theory of behavioral change. *Psychological Review*, 84(2), 191-215. Retrieved from: [http://www.uky.edu/bandura/bandura\\_1977PR.pdf](http://www.uky.edu/bandura/bandura_1977PR.pdf)
- Bandura, A. (1977). *Social learning theory*. Upper Saddle River, NJ: Prentice Hall, Inc.
- Bandura, A. (1986). *Social foundations of thought and action: A social theory*. Englewood Cliffs, NJ: Prentice Hall.
- Bandura, A. (1995). Exercise of personal and collective efficacy in changing societies. In Bandura. (Ed.) *Self-efficacy in changing societies*. (pp. 1-45) New York, NY: Cambridge Press.
- Bandura, A. (1997). *Self-efficacy: The exercise of control*. New York, NY: Freeman & Co.

- Bandura, A. (2001). Social cognitive theory: An agentic perspective. *Annual Review of Psychology*, 52, 1-26. Retrieved from: [http://www.uky.edu/~bandura/bandura 2001 APRr.pdf](http://www.uky.edu/~bandura/bandura%2001APRr.pdf)
- Bandura, A. (2012). On the functional properties of perceived self-efficacy revisited. *Journal of Management*, 38(1), 9-44. doi: 10.1177/0149206311410606
- Becker, S., & Gable, R. (2009). The relationship of self-efficacy with gpa, attendance, and college student retention. Presented at the 40<sup>th</sup> Annual Conference of the Northeastern Educational Research Association, Rocky Hill, Connecticut, October 21-23, 2009.
- Benjamin, R. (2003). The environment of American higher education: A constellation of changes. *The ANNALS of the American Academy of Political and Social Science*, 2003 585:8, 8-30. doi: 10.1177/0002716202238564
- Boylan, H. (2008). How research contributes to access and opportunity around the world. *Journal of Developmental Education*, 32(1) 2-3. National Center for Developmental Education at Appalachian State University.
- Boylan, H., Bliss, L., & Bonham, B. (1997). Program components and their relationship to student performance. *Journal of Development Education*, 20(3), 2-9.
- Boylan, H. & Bonham, B. (2007). 30 years of developmental education: A retrospective. *Journal of Developmental Education*, 30(3), 2-4. National Center for Developmental Education at Appalachian State University.
- Brent, S., Riddle, M., Bickaci, L., & Levy, C. (2005). From the liberal to the practical arts in American colleges and universities: Organizational analysis and curricular change, *Journal of Higher Education* (76)2, 155-180.
- Bueschel, A. (2004). The missing link: The role of community colleges in the transition between high school and college. In M. Kirst & A. Venezia (Eds.), *From high school to college: Improving opportunities for success in postsecondary education* (pp. 252-284). San Francisco, CA: Jossey Bass.
- Calcagno, J., & Long, B. (2008). The impact of postsecondary remediation using a regression discontinuity approach: Addressing endogenous sorting and noncompliance. National Center for Postsecondary Research. [www.PostsecondaryResearch.org](http://www.PostsecondaryResearch.org)
- Cofer, J. & Somers, P. (2001). What influences student persistence at two-year colleges? *Community College Review* 29, 56-76. doi: 10.1177/009155210102900304

College Board Advocacy and Policy Board. (2011). Trends in higher education series: Trends in community college education: Enrollment, prices, student aid, and debt level. College Board. Retrieved from [www.collegeboard.org/trends](http://www.collegeboard.org/trends)

Comings, J., Cuban, S., Bos, J., Porter, K., & Doolittle, F. (2004) As long as it takes: Responding to the challenges of adult student persistence in library literacy programs. [www.mdrc.org/publications/335/execsum.html](http://www.mdrc.org/publications/335/execsum.html)

De Vries, H., Dijkstra, M., & Kuhlman, P. (1988). Self-efficacy: the third factor besides attitude and subjective norm as a predictor of behavioral intentions. *Health Education Research, Theory and Practice*, 3(3) 273-282. ©LRL Press Limited, Oxford, England

Doninger, L. (2009). *Remedial reading and college courses: Learning to read or reading to learn? a study of practices in a community college in new england* (Doctoral dissertation). Available from ProQuest Dissertations and Theses database. (UMI number 3350023)

Goldrick-Rab, S. (2010). Challenges and opportunities for improving community college student success. *Review of Educational Research*, 80(3), pp.437-469. doi: 10.3102/0034654310370163

Gutman, A. (2008). The purposes of higher education. In C. F. Conrad, & J. Johnson (Eds.), *College & university curriculum: Placing learning at the epicenter of courses, programs and institutions* (2<sup>nd</sup> ed.), pp. 7-20. Boston, MA: Pearson. (Reprinted from *Democratic Education*, 1999, Princeton University Press)

Hearn, J., & Holdsworth, J. (2002). Influences of state-level policies and practices on college students' learning. *Peabody Journal of Education*, 77(3), 6-39.

Hummel-Rossi, B., & Ashdown, J. (2002). The state of cost-benefit and cost-effectiveness analysis in education. *Review of Educational Research*, 72(1), 1-30.

Johanson, J. (2010). Cultivating critical thinking: An interview with Stephen Brookfield. *Journal of Developmental Education*, 33(3), 26-30.

Kirst, M., & Venezia, A. (Eds.). (2004). *From high school to college*. San Francisco, CA: Jossey Bass.

Kuh, G. D., Kinzie, J., Schuh, J., Whitt, E., & Associates (Eds.), (2005). *Student success in college: Creating conditions that matter*. San Francisco, CA: Jossey-Bass.

Labaree, D.F. (2006, spring). Mutual subversion: A short history of the liberal and the professional in American higher education, *History of Education Quarterly*, 46(1), 1-15.

- Levin, H., & Calcagno, J. (2008). Remediation in the community college: An evaluator's perspective. *Community College Review*, 35(181),181-207. doi: 1177/0091552107310118
- Levin, H., & Calcagno, J. (2008). Remediation in the community college: An evaluator's perspective. *Community College Review*, 35(181),181-207. doi: 1177/0091552107310118
- Levin, J., Cox, E., Cerven, C., & Haberler, Z. (2010).The recipe for promising practices in community colleges. *Community College Review*, 38(1) 31-58. doi: 10.1177/0091552110374505
- Long, B., & Kurlaender, M. (2009). Do community colleges provide a viable pathway to a baccalaureate degree?. *Educational Evaluation and Policy Analysis*,31(1), 30-53.
- McCabe, R. (2003). Yes we can!: A community college guide for developing America's underprepared. Phoenix, AZ: League for Innovation in the Community College.
- McCoach, D., Gable, R., & Madura, J. (2013). Instrument Development in the Affective Domain. New York, NY: Springer.
- Miller, W. & Rollnick, S. (2002). *Motivational interviewing: Preparing people for change*, 2<sup>nd</sup> Edition. New York, NY: Guilford Press.
- Miller, W. & Rose, G. (2009).Toward a theory of motivational interviewing. *American Psychology* 64(6), 527-537. doi. 0.1037/a0016830
- Nash, A., & Kallenbach, S. (2009). Making it worth the stay: Findings from the New England adult learner persistence project. Boston, MA: New England Literacy Resource Center.
- National Center for Educational Statistics. (2011). Digest of education statistics: Table 200. U. S. Department of Education. Retrieved from [nces.ed.gov/programs/digest/d11/tables/dt11\\_200.asp](http://nces.ed.gov/programs/digest/d11/tables/dt11_200.asp)
- Newman, F., Couturier, L., Scurry, J., (2004). *The future of higher education: Rhetoric, reality, and the risks of the market*. San Francisco, CA: Jossey Bass.
- Parjares, F. (2008). Motivational role of self-efficacy beliefs in self-regulated learning. In D. Schunk & B. Zimmerman (Eds.) *Motivation and Self-Regulated Learning: theory, Research, and Applications* (pp. 111-139). New York, NY: Lawrence Erlbaum Associates, Taylor and Francis Group.
- Pascarella, E. & Terenzini, P. (2005). How college affects students: A third decade of research, Vol. 2. San Francisco, CA: Jossey Bass

- Preuss, M. (2008). Developmental education literature: A proposed architecture. *Journal of Developmental Education*, 32(2), 12-22.
- Roueche, J., Roueche, S., & Ely, E. (2001). Pursuing excellence: The community college of Denver. *Community College Journal of Research and Practice*, 25, 517-537.
- Roueche, J., & Waiwaiole, E. (2009). Developmental education: An investment we cannot afford not to make. *Diverse Issues in Higher Education*, 26(16), 1-8.
- Russell, A. (2008). Enhancing college student success through developmental education. American Association of State Colleges and universities: A Higher Education Policy Brief: August 2008. Retrieved from <http://www.achieve.org/files/50-state-2008-final02-25-08.pdf>
- Ryan, R., Lynch, M., Vansteenkiste, M., & Deci, E. (2011). Motivation and autonomy in counseling, psychotherapy, and behavioral change: A look at theory and practice. *The Counseling Psychologist* 39(2), 193-260. doi: 10.1177/0011000009359313
- Saxon, P., & Boylan, H. (2001). The cost of remedial education in higher education. *Journal of Developmental Education*, 25(2), 1-14.
- Schunk, D. (1996). Learning theories: An educational perspective (2<sup>nd</sup> ed.). Englewood Cliffs, N. J.: Prentice Hall.
- Schunk, D. & Pajares, F. (2002). The development of academic self-efficacy. In A. Wigfield & J. Eccles (Eds.), *Development of achievement motivation*, (pp.15-37). San Diego, CA: Academic Press.
- Schwarzer, R. (1995). Measurement of perceived self-efficacy. Psychometric scales from cross-cultural research. Berlin, Germany: Freie Universitat Berlin. <http://userpage.fu-berlin.de/~health/selfscal.htm>
- Schwarzer, R. (2005). Everything you always wanted to know about the self-efficacy scale but were afraid to ask. [http://userpage.fu-berlin.de/~health/self/selfeff\\_public.htm](http://userpage.fu-berlin.de/~health/self/selfeff_public.htm)
- Stampen, J., & Hansen, W. (1999). Improving higher education access and persistence: New directions from a systems perspective. *Educational Evaluation and Policy Analysis*, 21(4), 417-426. doi: 10.3102/01623737021004417
- Symonds, W., Schwartz, R., & Ferguson, R. (2011). Pathways to prosperity: Meeting the challenge of preparing your Americans for the 21<sup>st</sup> century. Report issued by the Pathways to Prosperity Project, Harvard Graduate School of Education.

- Usher, E. & Pajares, F. (2008). Self-efficacy for self-regulated learning: A validation study. *Educational and Psychological Measurement, 68*(3), 443-463. doi: 10.1177/0013164407308475
- Waycaster, P. (2001). Factors impacting success in community college developmental mathematics courses and subsequent courses. *Community College Journal of Research and Practice, 25*, 403-416. Retrieved from Southwest Virginia Community College, Richlands, VA 24641 (researcher has copy)
- Zavarella, C., & Ignash, J. (2009). Instructional delivery in developmental mathematics: Impact on retention. *Journal of Developmental Education, 32*(3), 2-13.
- Zimmerman, B. (1995). Self-efficacy and educational development. In A. Bandura (Ed.), *Self-efficacy in a changing society*. (pp. 202-231). New York, NY: Cambridge Press
- Zimmerman, B. (2002). Becoming a self-regulated learner: An overview. *Theory Into Practice, 41*(1), 64-70. doi: 10.1207/s15430421tip4102\_2
- Zimmerman, B., 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*(3), 663-676. doi:10.3102/00028312029003663

## APPENDIX

Table 1: Relationship of the Participant Demographic Variables with General Self-Efficacy, Motivation, Academic Self-Efficacy, and Persistence.

Table 2: ANOVA Results for Demographic Variables Differences Regarding: General Self-Efficacy, Motivation, Academic Self-Efficacy, and Persistence.

---

Table 1

*Relationship of the Participant Demographic Variables with General Self-Efficacy, Motivation, Academic Self-Efficacy, and Persistence.*

| Demographic Variable <sup>a</sup>       | General S-E  |      |       |     | Motivation  |     |       |     | Academic Confidence |     |       |     | Persistence  |       |       |     |
|---|--------------|------|-------|-----|-------------|-----|-------|-----|---------------------|-----|-------|-----|--------------|-------|-------|-----|
|   | M            | SD   | t     | p   | M           | SD  | t     | p   | M                   | SD  | t     | p   | M            | SD    | t     | p   |
| <b>Gender</b>                           |              |      |       |     |             |     |       |     |                     |     |       |     |              |       |       |     |
| Male                                    | <b>31.15</b> | 4.83 | -1.06 | .29 | <b>2.88</b> | .33 | -.18  | .86 | <b>2.42</b>         | .64 | -.27  | .79 | <b>65.31</b> | 23.93 | -1.24 | .22 |
| Female                                  | <b>32.41</b> | 4.89 | -1.07 | .29 | <b>2.90</b> | .31 | -.17  | .86 | <b>2.47</b>         | .74 | -.28  | .78 | <b>71.88</b> | 20.61 | -1.19 | .24 |
| <b>Parent &lt;18</b>                    |              |      |       |     |             |     |       |     |                     |     |       |     |              |       |       |     |
| Yes                                     | <b>32.84</b> | 4.50 | 1.93  | .06 | <b>2.89</b> | .32 | -.15  | .88 | <b>2.47</b>         | .69 | .20   | .84 | <b>69.40</b> | 21.09 | -.10  | .92 |
| No                                      | <b>30.67</b> | 5.20 | 1.87  | .07 | <b>2.90</b> | .31 | -.15  | .88 | <b>2.43</b>         | .77 | .20   | .84 | <b>69.90</b> | 23.38 | -.94  | .93 |
| <b>Parent &lt;5</b>                     |              |      |       |     |             |     |       |     |                     |     |       |     |              |       |       |     |
| Yes                                     | <b>33.13</b> | 4.12 | 1.75  | .09 | <b>2.84</b> | .37 | -1.28 | .20 | <b>2.58</b>         | .56 | 1.32  | .19 | <b>67.55</b> | 19.79 | -.68  | .50 |
| No                                      | <b>31.16</b> | 5.23 | 1.82  | .07 | <b>2.93</b> | .25 | -1.28 | .24 | <b>2.36</b>         | .78 | 1.40  | .17 | <b>71.05</b> | 23.36 | -.70  | .49 |
| <b>Participant Born U.S.</b>            |              |      |       |     |             |     |       |     |                     |     |       |     |              |       |       |     |
| Yes                                     | <b>32.05</b> | 4.82 | .14   | .89 | <b>2.92</b> | .27 | .86   | .39 | <b>2.31</b>         | .73 | -1.90 | .06 | <b>65.85</b> | 22.03 | -1.56 | .12 |
| No                                      | <b>31.89</b> | 5.00 | .14   | .89 | <b>2.86</b> | .35 | .85   | .40 | <b>2.61</b>         | .64 | -1.91 | .06 | <b>73.67</b> | 21.28 | -1.56 | .12 |
| <b>Parent Born U.S.</b>                 |              |      |       |     |             |     |       |     |                     |     |       |     |              |       |       |     |
| Yes                                     | <b>32.18</b> | 4.40 | .23   | .81 | <b>2.95</b> | .21 | 1.10  | .28 | <b>2.50</b>         | .74 | .37   | .71 | <b>61.90</b> | 21.05 | -2.00 | .05 |
| No                                      | <b>31.89</b> | 5.09 | .25   | .80 | <b>2.87</b> | .34 | 1.33  | .19 | <b>2.43</b>         | .69 | .36   | .72 | <b>72.80</b> | 21.61 | -2.02 | .05 |
| <b>English in Participant Household</b> |              |      |       |     |             |     |       |     |                     |     |       |     |              |       |       |     |
| Yes                                     | <b>33.12</b> | 4.49 | 1.88  | .06 | <b>2.82</b> | .39 | -1.80 | .08 | <b>2.50</b>         | .62 | .52   | .60 | <b>66.29</b> | 21.17 | -1.20 | .24 |
| No                                      | <b>31.02</b> | 5.02 | 1.90  | .06 | <b>2.95</b> | .22 | -1.71 | .09 | <b>2.41</b>         | .77 | -1.20 | .60 | <b>72.34</b> | 22.34 | -1.20 | .23 |

<sup>a</sup> Sample sizes are as follows: Gender, Male,  $n=26$ , Female,  $n=49$ ; Parent<18, Yes  $n=45$ , No,  $n=30$ ; Parent<5, Yes,  $n=31$ , No,  $n=44$ ; Participant Born U.S., Yes,  $n=39$ , No,  $n=36$ ; Parent Born U.S., Yes,  $n=22$ , No,  $n=53$ ; English in Participant Household, Yes,  $n=34$ , No,  $n=41$ .

Table 2

ANOVA Results for Demographic Variables Differences Regarding: General Self-Efficacy, Motivation, Academic Self-Efficacy, and Persistence

| Demographic Variable <sup>a</sup> | <u>General S-E</u> |      |     |     | <u>Motivation</u> |     |      |     | <u>Academic S-E</u> |     |      |     |          | <u>Persistence</u> |       |      |     |
|-----------------------------------|--------------------|------|-----|-----|-------------------|-----|------|-----|---------------------|-----|------|-----|----------|--------------------|-------|------|-----|
|                                   | M                  | SD   | F   | p   | M                 | SD  | F    | p   | M                   | SD  | F    | p   | $\eta^2$ | M                  | SD    | F    | p   |
| <b>Marital</b>                    |                    |      |     |     |                   |     |      |     |                     |     |      |     |          |                    |       |      |     |
| Married                           | 33.18              | 4.67 | .97 | .38 | 2.94              | .24 | 1.07 | .35 | 2.47                | .72 | .03  | .97 |          | 66.29              | 20.03 | 2.98 | .06 |
| Single                            | 31.82              | 4.94 |     |     | 2.90              | .30 |      |     | 2.44                | .70 |      |     |          | 67.96              | 22.41 |      |     |
| Separated                         | 30.38              | 4.84 |     |     | 2.75              | .46 |      |     | 2.50                | .76 |      |     |          | 86.88              | 15.61 |      |     |
| <b>Employment</b>                 |                    |      |     |     |                   |     |      |     |                     |     |      |     |          |                    |       |      |     |
| Full time                         | 33.25              | 4.42 | .72 | .49 | 2.94              | .25 | .38  | .69 | 2.75                | .45 | 2.11 | .13 |          | 71.81              | 22.59 | .13  | .88 |
| Part time                         | 31.33              | 4.75 |     |     | 2.83              | .39 |      |     | 2.50                | .67 |      |     |          | 70.33              | 26.62 |      |     |
| Not working                       | 31.70              | 5.06 |     |     | 2.89              | .31 |      |     | 2.34                | .76 |      |     |          | 68.66              | 20.79 |      |     |
| <b>Last Grade</b>                 |                    |      |     |     |                   |     |      |     |                     |     |      |     |          |                    |       |      |     |
| 1-8 <sup>th</sup>                 | 31.12              | 4.97 | .77 | .55 | 2.94              | .24 | .76  | .56 | 2.12                | .86 | 2.90 | .03 |          | 70.06              | 20.30 | .11  | .98 |
| 9 <sup>th</sup>                   | 31.81              | 5.04 |     |     | 2.91              | .30 |      |     | 2.36                | .81 |      |     |          | 68.55              | 17.32 |      |     |
| 10 <sup>th</sup>                  | 32.72              | 4.04 |     |     | 2.83              | .38 |      |     | 2.39                | .61 |      |     |          | 67.56              | 23.13 |      |     |
| 11 <sup>th</sup>                  | 30.22              | 4.52 |     |     | 3.00              | .00 |      |     | 2.56                | .53 |      |     |          | 70.00              | 21.39 |      |     |
| 12 <sup>th</sup>                  | 33.13              | 5.41 |     |     | 2.81              | .40 |      |     | 2.81                | .40 |      |     |          | 72.56              | 27.41 |      |     |
| <b>Age</b>                        |                    |      |     |     |                   |     |      |     |                     |     |      |     |          |                    |       |      |     |
| 18-20                             | 30.77              | 5.26 | .87 | .45 | 2.77              | .44 | .77  | .51 | 2.88                | .33 | 1.47 | .22 |          | 66.33              | 24.86 | .59  | .62 |
| 21-29                             | 31.46              | 4.65 |     |     | 2.92              | .27 |      |     | 2.46                | .64 |      |     |          | 70.26              | 18.60 |      |     |
| 30-40                             | 33.38              | 4.62 |     |     | 2.85              | .35 |      |     | 2.33                | .79 |      |     |          | 65.76              | 21.91 |      |     |
| 41+                               | 31.68              | 5.28 |     |     | 2.94              | .22 |      |     | 2.36                | .76 |      |     |          | 74.47              | 25.12 |      |     |

<sup>a</sup> Sample sizes are as follows: Marital, Married,  $n=17$ , Single,  $n=50$ , Separated,  $n=8$ ; Employment, Full time,  $n=16$ , Part time,  $n=12$ , Not working,  $n=47$ ; Last Grade, 1-8<sup>th</sup>,  $n=17$ ; 9<sup>th</sup>,  $n=11$ ; 10<sup>th</sup>,  $n=18$ ; 11<sup>th</sup>,  $n=9$ ; 12<sup>th</sup>,  $n=16$ .

Table 2