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A Study of Prior Learning Assessment in Degree Completion

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A STUDY OF PRIOR LEARNING ASSESSMENT IN DEGREE COMPLETION

Dissertation submitted to the
Graduate College of Marshall University
in partial fulfillment of the
requirements for the degree of

Doctor of Education
in
Curriculum and Instruction

by
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December, 2012

DEDICATION

This dissertation is dedicated to my family and friends. Without their constant support and encouragement, my journey would have ended before it began. To my wonderful sons, George, Jr. and David, who among all these folks have been the most patient with the craziness of this dissertation journey. To my father, David Hill, the voice of reason and grounding all my life, thank you for your calm advice when I frequently got frazzled. To my mother, Gloria Hill, my greatest inspiration of faith, love and persistence throughout my life; although you are no longer physically with me, I know you have never left my side. To Virginia Chappell, who (like Mom) has been an ever-present angel keeping me focused. To my sisters, Gloria and Michelle, thank you for laughing with me, crying with me, yelling with me, but most importantly never letting me give up. To George Chappell, Sr., who was there in the beginning, and who, of all people, understands the importance of completing this journey. To my dear friend, Greg Falvo, whose constant encouragement has kept me steady during the rockiest parts of my journey. Most of all, my deepest thanks go to Dr. Cheryl Brown, mien das Boot. Every doctoral student needs someone to keep her on task and make her accountable. For me, this was das Boot!

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ABSTRACT

The purpose of this study was to examine the role of prior learning assessment (PLA) in postsecondary degree completion for adult community college students at Mountwest Community and Technical College (MCTC). The study group consisted of 339 MCTC graduates, who applied PLA credits toward degree completion between the academic year 2006 and 2011. A comparison group was comprised of 321 MCTC graduates from the same time period, who did not apply PLA toward degree completion. Descriptive statistics and logistic regression analysis found statistically significant relationships between time to degree completion and the application of PLA from military credits and institutional or state credit evaluations, but did not find statistically significant relationships between time to degree completion and standardized examination. Too few participants were identified from graduates applying PLA from portfolio and ACE evaluated corporate training for accurate analysis. In addition, statistically significant relationships were found between application of PLA credits and age at admission and the application of PLA and biological sex, but no significant relationship was found between the application of PLA and race/ethnicity. This study generated a profile of the categories of PLA most frequently used at MCTC, as well as the student characteristics that correlated with successful degree completion through the application of PLA. Results may be used to develop new administrative policies and procedures that guide advisors, faculty and staff in recruiting and retaining adult students.

CHAPTER ONE: INTRODUCTION

The Spelling Report (Spelling, 2006) brought a new awareness of the role of postsecondary institutions in the United States. The report emphasized a new focus on accountability, accessibility, and quality. In higher education, recommendations from this report created a shift in focus from instructional techniques to institutional policies and procedures that promote greater student retention, student degree completion and improved affordability for all students attending postsecondary institutions. Following this report, community colleges were placed firmly in the spotlight as an affordable, flexible avenue for millions of Americans to complete their college degrees.

Numerous studies have linked college completion to an increase in economic development and family security (Gonzalez, 2011; Kotamraju & Blackman, 2011; Schmidt, 2008). According to the United States Bureau of Labor Statistics (2011), for every step in education a graduate achieves, salary increases proportionately. In addition, as individuals move up the educational ladder, their likelihood of unemployment decreases. Graduates with an associate degree earn, on average, 21% more than high school graduates and the unemployment rate for individuals with these degrees decreases by 3.3% (United States Bureau of Labor and Statistics, 2011).

West Virginia statistics mirror the national trends, where nearly one out of two West Virginia families lives below the federal poverty level (National Center for Children in Poverty, 2011). Nationally, the average median earning in 2009 for an employee with a high school diploma or graduate equivalency diploma (GED) was \$30,000.00, whereas those individuals holding an associate degree earned an average of \$36,000.00 (Snyder & Dillow, 2010). For economically depressed states like West Virginia, the difference between completing high school and completing an associate degree represents a significant increase in family annual income and

a significantly improved standard of living (National Center for Children in Poverty, 2010; Snyder & Dillow, 2010).

Despite the correlation between college completion and increased family income, in 2008 only 41.6% of the U.S. population between the ages of 25 and 34 held a postsecondary degree (Lee & Rawls, 2010). The percentage is lower for minorities; only 30.3% of African-Americans and 19.8% of Hispanics held an associate degree or higher in 2008. Furthermore, where the United States (U.S.) was once a leader among developed nations in college completion and the forerunner in innovation worldwide, in 2010 the U.S. placed twelfth out of 36 developed countries in degree attainment for citizens between the ages of 25 and 34 years old (Lee & Rawls, 2010). This decrease represents more than a decrease in college graduates. As our aging population advances through the next decade, this decrease represents a loss of competitiveness as proportionally fewer new U.S. graduates enter into the global marketplace (Hebel, 2008; Lee & Rawls, 2010; Lewin, 2010).

One suggestion to reverse the low college graduation rate and improve economic development is to take advantage of the numerous community colleges throughout the country (Gonzalez, 2011; Kotamraju & Blackman, 2011; Schmidt, 2008). Community colleges offer academic programs that act as entry points for careers in variety of fields (American Association for Community Colleges, 2011). According to the American Association of Community Colleges (AACC), in fall 2008, 44% of all undergraduate students were enrolled at a community college, signifying approximately 12.4 million students nationally (American Association for Community Colleges, 2011). Of these students, approximately 52% were Hispanic, 44% were African American, and over half were economically disadvantaged (Baime, 2011). Community college students continue to be a force within higher education demonstrated by an increase of 15% in student headcount from 2008 through fall 2010. It is anticipated that these numbers will

increase further for the next several years as the value of a community college education continues to be discussed federally and at the state level (American Association for Community Colleges, 2011; Baime, 2011; Gonzales, J., 2011; Mullin, C. & Phillippe, K., 2009).

The interest in community colleges as a viable solution to the college completion conundrum has gained federal interest, as evidenced by the Obama administration's consistent backing of community college education. Since his election in 2008, President Obama has given unprecedented support for the mission of the community colleges. Through his words, but more importantly through his actions, community colleges have been propelled into the spotlight where millions of dollars in new federal funding have been funneled since 2008. The 2020 American Graduation Initiative (AGI), the Obama administration's college completion agenda, focuses on community colleges as an expeditious means for many Americans to earn a degree. The goal of this initiative is simple: to increase college completion rates as an avenue to stimulate economic recovery (Baime, 2011; Kotamraju & Blackman, 2011; Schmidt, 2008). Prior learning assessment (PLA) is an innovative means to address the American workforce needs through the recognition of prior college-level learning that increases degree completion for thousands of American students annually.

Prior learning assessment...offers a proven pathway to raise productivity in higher education, to enable millions of students who have stopped short of a degree to complete their education...making a college degree more affordable and accessible to all (Kamenetz, 2011)

Theoretical Framework

Frequently seen in state community college systems are administrative procedures allowing for the articulation of college credit from learning experiences outside the traditional classroom. As part of college programs that focus on assisting students in the completion of

their postsecondary degrees, PLA offers students an avenue to apply previous experiential learning, gained through a variety of venues, to college transcripts, effectively decreasing the time to graduation (Hoover, 2010; Washbourn, 1996).

Prior learning includes life experiences such as volunteerism, work experiences, and parenting. Non-credit courses and independent study are also included because all these experiences have the potential to add to the individual's knowledge base. PLA, according to Klein-Collins (2006), "... is the process by which many colleges evaluate for academic credit the college-level knowledge and skills an individual has gained outside of the classroom, including from employment,...military training/service, travel, hobbies, civic activities and volunteer service" (p. 1). Lamoreaux (2005) mirrored this definition, but added that PLA "... is judged to be comparable to college learning, but that which took place outside college sponsorship" (p. 1). Zucker, Johnson and Flint (1999) defined PLA in a similar vein, again emphasizing that the purpose of PLA is for the awarding of college credit for college-level learning.

Numerous educators, theorists and philosophers have linked the role of experience to learning in both adults and children (Dewey, 1938/1997; Knowles, 1970; Kolb, 1984; Mezirow, 1991). The 18th century German philosopher, Immanuel Kant, supported the view that deep conceptual knowledge is attained through a persistent and focused interaction with one's environment. In Kantian philosophy the experience provides the context, but the categories are provided by the mind. Knowledge, therefore, is not fixed but created through interaction with one's environment. Learning occurs through the learner's construction of his or her own learned experiences from experiences encountered throughout the learner's life (Green & Gredler, 2002; Kant, 2002).

American educational philosopher John Dewey's view that learning is enhanced by real-world experiences resonates through the adult learning community. According to Dewey (1938,

1997), recognition of prior experiences should be at the onset of all new learning. “The beginning of instruction shall be made with the experience learners already have...this experience and the capacities that have been developed during this course proved the starting point for all further learning” (Dewey, 1938, p. 74). This experience can be attained by either formal or informal learning through workplace training, noncredit courses, field experiences and/or life experiences.

Kolb (1984) expounded on Dewey’s philosophy of the value of the learned experience by saying that prior learning is the process where “knowledge is created through the transformation of experiences” (p.38). In his study of experiential learning, Kolb (1984) developed a model of learning that described four independent steps to the learning cycle. These include concrete experience, reflective observation, abstract conceptualization and active experimentation (Kolb, 1984). This model provides a framework for visualizing the transformation process that occurs during experiential learning.

It is this transformation of the learned experience that Mezirow (1990, 1991) supported as the primary outcome for the development of knowledge. In Mezirow’s view, experiential learning becomes a way for learners to re-evaluate and recreate their pasts in light of these new experiences. In this way, learners have an opportunity to create their own meaning and assign personal value to knowledge through critical thinking. As experiential learning gains ground as an acceptable means to award college credit, additional innovative methods may be seen in the literature (Conrad, 2008).

Just as learning experiences can take various forms, so do the assessment methods available to evaluate these experiences. The assessment of prior learning generally falls into one of four categories: standardized exams; individual course challenge examinations offered within individual postsecondary institutions; assessment of military and professional course work; and

individualized assessment, often seen as portfolio assessments. These assessments include College Level Examination Program (CLEP) exams, Defense Activity for Non Traditional Education Support (DANTES) exams, American Council on Education (ACE) credits, industry certifications, and portfolio documentation (Brigham & Klein-Collins, 2010; Klein-Collins, 2006; Zucker et al., 1999). In Europe and Canada, the emphasis is placed on the recognition of prior learning and the subsequent application of these credits toward postsecondary academic credits. Therefore in these countries, the term prior learning assessment and recognition (PLAR) is more frequently seen in the literature (Thomas, 2000). Whether or not it is emphasized in the title, it is this recognition step in prior learning assessment that is most critical to adults in their journey to a college degree.

Limited research has been conducted in the role of PLA in associate degree completion. Previous studies have focused on undergraduate students and evaluated both associate and baccalaureate degree seekers, or baccalaureate degree seeking students alone. Among these studies are Pearson (2000, 2004), Sargent (1999) and Billingham and Travaglini (1981). At Simpson College, Pearson (2000) evaluated the persistence to degree completion for students at a Midwestern liberal arts four-year college applying portfolio assessment credits as part of their degrees. The study included 1680 adult students (over the age of 24) and part-time students (registered for fewer than 12 credit hours of academic classes per term). Pearson (2000, 2004) reported that students earning PLA credits persisted to degree completion at a higher rate. In the study, students were 72% more likely to persist to a baccalaureate degree when portfolio assessments were used to apply college credit. Person noted that “completion of the PLA portfolio assessment doubles the odds of persistence for an average student in this study” (Pearson, 2000, p. 131).

Sargent (1999) conducted a survey of PLA completers in the Vermont State College System between 1988 and 1992. The purpose of this study included determining the status of degree completion of PLA students and the extent to which they attribute their degree completion to PLA. The survey was mailed to 734 PLA completers and 253 responded. Of these respondents 88.9% participated in some college after receiving PLA credits, and 81.7% indicated they had earned a degree of some kind. In addition, 97.6% of those respondents who had received some college credit went on to complete a baccalaureate degree. These included associate degrees (32%), baccalaureate degrees (41%) and master's degrees (12%). A majority of respondents (80%) credited PLA in some part to their ability to complete their degree.

Billingham and Travaglini (1981) conducted a mixed methods study at Central Michigan University (CMU) in order to explore the characteristics of students enrolled in the Independent Degree Program (IDP), a non-traditional baccalaureate degree program at CMU geared toward students who could not graduate through traditional college programs. Experiential learning opportunities and/or prior learning assessments were strong components of this program. The study population consisted of 376 IDP participants who were evaluated for 31 characteristics (17 academic, 9 personal and 5 socio-economic) gathered from student college records and a participant survey. In this study 100% of the students graduating had received credit for experiential learning before or soon after beginning their program of study at CMU. The authors conclude that "possibly the most important factor in predicting student success... is the number of credit hours transferred into the program and/or obtained soon after entry through experiential learning awards" (p. 178).

Studies have reported mixed results concerning the significance of biological sex and age on degree completion for students earning PLA credits. Pearson (2000) did not find biological sex or age significant for students who applied PLA credits in their persistence to baccalaureate

degree. Stemm (2009), on the contrary, documented in a study of over 45,000 undergraduate students that there is a significant difference between the sexes in the use of PLA. This study was conducted at a private for-profit university awarding both associate and baccalaureate degrees. Student learning experiences were evaluated using portfolio assessments as the sole PLA method (Pearson, 2000, 2004).

In a seminal study conducted by Klein-Collins (2010), the academic records of students 25 years old or older at 48 postsecondary institutions across the U.S. and one in Canada were surveyed. Participating institutions conferred baccalaureate degrees only, associate degrees only, or both baccalaureate and associate degrees. Each was evaluated over a seven-year period of time on their application of PLA toward degree completion. Among these 48 institutions only seven were independent community colleges, and none of these community colleges were from the Southern Appalachian region of the United States that included West Virginia. Although helpful in summarizing the status of PLA nationally, the greatest limitation of the study was that it was not designed to identify individual types of PLA that correlate with degree completion, but rather evaluated all forms of PLA as one variable.

Nonetheless, the study identified key factors in the use of PLA toward degree completion at these participating institutions. Among the findings was the report that “PLA students had better academic outcomes, particularly in terms of graduation rates and persistence, than non-PLA adult students” (Klein-Collins, 2010, p. 57). The study also found that, within a student cohort spanning seven years, PLA students graduated in half the time of non-PLA students. In some incidences, the graduation rate was three to four times higher. This finding was true for all levels of academic degrees but especially marked in minority students (Klein-Collins, 2010).

Statement of the Problem

This research was conducted to add to the body of knowledge in the areas of PLA and the application of PLA to degree completion for adult community college students. Prior learning assessment has proven to be a valuable tool to help adult students complete their college degree, but current studies are almost entirely confined to the study of the completion of baccalaureate degrees. Few studies have been undertaken to explore the role PLA plays in community college students' degree completion. Given that the number of students entering into community colleges is increasing, understanding the types of PLA that correlate most strongly with degree completion will aid administrators at these institutions of higher education in key decision making.

Furthermore, to date there is limited benchmarking and standardization of procedures within and across institutions. Devoid of guidance, decision makers are often forced to use anecdotal data or personal experiences to guide the decision process (Stemm, 2009). By defining the role PLA plays in degree completion for their institutions, administrators at the study college and similar peer institutions can use this information in a variety of ways to improve their institutional completion rates through (a) constructing new programs that utilize PLA as fundamental features of their curriculum, (b) upgrading existing programs to facilitate the application of PLA credits, and (c) creating policies and procedures that guide the recognition of quality PLA at their institutions, including those related to advising adult students.

Purpose of the Study and Research Questions

The purpose of this study was to examine the role of prior learning assessment in postsecondary degree completion for adult students at Mountwest Community and Technical College (MCTC). Although there have been critics of specific college studies (Bailey & Alfonso, 2005), according to Bean (1986) and Tinto (1975) persistence is institution-specific due

to unique environmental factors within that institution. Single institution studies allow for the collection of a large data pool but controlled for extraneous factors inherent to persistence factors in other institutions, such as geography and student experiences.

Within this specified population, the specific research questions that were addressed are:

1. What relationship, if any, exists between time to degree completion and prior learning assessment (PLA) credited through portfolio assessment?
2. What relationship, if any, exists between time to degree completion and PLA credited through standardized examinations, e.g. DANTES Subject Standardized Test (DSST) and College Level Examination Program (CLEP)?
3. What relationship, if any, exists between time to degree completion and PLA credited through ACE-evaluated corporate training?
4. What relationship, if any, exists between time to degree completion and PLA credited through ACE-evaluated military training?
5. What relationship, if any, exists between time to degree completion and PLA credited through institutional or state credit evaluations?
6. What relationship, if any, exists between PLA for college credits and the following student characteristics: age, biological sex and race?

Operational Definitions

The following operational definitions were applied in the context of this study:

The **adult student** has been defined in the literature in many ways. For the purpose of this study, the definition of adult student was any student 25 years old or older. This definition coincides with the definition of adult student used by the Council on Adult and Experiential Learning (CAEL) in the seminal work on prior learning assessment (PLA) and adult learning

(Klein-Collins, 2010). Information on student age was collected from the age documented on MCTC official student records.

Time to degree completion for the purposes of this study refers to the amount of time a student takes to complete his or her college degree from admission to graduation. At MCTC the earned degree was one of three types of degrees: an associate degree, an associate of applied science degree or a certificate of applied science degree.

Net time to degree completion for the purpose of the study is the time students were actually enrolled at MCTC. In this study, net time to degree completion was counted in months from the date admitted to the date graduated, minus the number of months not enrolled at MCTC.

Prior learning assessment (PLA) for the purpose of this study was defined using the definition by Zucker et al., (1999), who stated that PLA “refers to any knowledge-building or skill-attaining that occurs prior to enrollment or outside of a postsecondary institution, assessed for the purpose of awarding college credit” (p. 3). In this study, PLA was measured in semester credit hours awarded within each of the following PLA categories: (a) portfolio assessment, (b) standardized examinations, (c) ACE-evaluated corporate training, (d) ACE-evaluated military training, and (e) institutional or state credit evaluations. To further clarify, the following definitions were used for the specific types of prior learning assessment (PLA) evaluated in the study:

Portfolio assessments are student-created artifacts that document non-formal, non-collegiate activities (Klein-Collins, 2010). In this study, total credits awarded for portfolio assessments were noted. This information was obtained from students’ official college records.

Standardized examinations are available in a variety of subjects. Nationally standardized examinations are offered by nationally recognized organizations, e.g. College

Board and Chauncey Group. These include Advanced Placement (AP) examinations, College Level Examination Program (CLEP) tests, and Defense Activity for Non Traditional Education Support (DANTES) examinations (Klein-Collins, 2010). In this study, total credits awarded for standardized examinations were noted. This information was documented from students' official college records.

ACE-evaluated corporate training (ACE-C) is awarded by the American Council on Education (ACE), which publishes credit recommendations for non-college formal training that takes place in the corporate setting (American Council on Education, 2011; 1981). This definition would include those courses that have been applied to the student's transcript that fall within these recommendations (Klein-Collins, 2010). In this study, total credits awarded for ACE-evaluated corporate training were noted. This information was gathered from students' official college records.

ACE-evaluated military training (ACE-M) is awarded by the American Council on Education (ACE) which publishes credit recommendations for non-college training that takes place in the military (American Council on Education, 2011; 1981). This definition would include those courses that have been applied to the student's transcript that fall within these recommendations (Klein-Collins, 2010). In this study, total credits awarded for ACE-evaluated military training and the branch of the military were noted. This information was obtained from students' official college records.

Institutional challenge examinations are customized evaluation of learning based on institutional courses or programs. Often these are course final comprehensive examinations that document a student's level of competency in a subject (Klein-Collins, 2010). In this study, total credits awarded for institutional challenge examinations were included in the category with

institutional or state credit evaluations. The credits in this category were documented from student's official college records.

Institutional or state credit evaluations are non-formal learning opportunities that are evaluated either at the state level or the institutional level and are applied for college-level credit. These examinations may be customized based on local industry training. In this study, total credits awarded for institutional or state credit evaluations were noted and were documented from students' official college records.

The response variable in the study was net time to degree completion. The degrees included in this study were associate of art degree (AA), associate of applied science (AAS) degree, and certificate of applied science (CAS) degree. Degree designations for the West Virginia Community College System are outlined in Procedural Rule 135, Series 11 (West Virginia Community and Technical College System, 2011). Prior to 2011, the official degree designation for the current Certificate of Applied Science (CAS) Degree was Certificate of Proficiency (CP).

The predictors for the study were the various categories of PLA and student characteristics. Categories of PLA include: Portfolio assessment, standardized examinations, ACE-C, ACE-M, and institutional or state credit evaluations. Student characteristics include age, race/ethnicity, and biological sex. The following definitions clarify these terms as they apply to this specific study.

Student age for the purpose of this study was the age when last admitted to the college, based on date of birth from official college records. Age was recorded in years. Because students are not required to disclose their age, participants not reporting age were noted as not reported (NR).

Race/ethnicity for the purpose of this study was noted from the student's official college records. Categories of race/ethnicity included White-Non-Hispanic (WNH), Black (B), Hispanic (H), Native American (NAT), Pacific Islander (PI), or Asian (A). Because students are not required to disclose their race/ethnicity, participants not reporting this information had race/ethnicity denoted as not reported (NR). Due to the low number of individual categories of minorities, all minorities were grouped together into one category, i.e. minority. In this study race/ethnicity was categorized as one of the following: WNH, minority, or NR.

Biological sex for the purposes of this study was noted from the student's official college records. Biological sex was recorded as male (M) or female (F). Those students not reporting biological sex on the official application were recorded as not reported (NR).

Additional data collected from the college transcript or student file include the following:

Admission date for the purpose of this study was the date in month and year the student was admitted to the college as noted from the student's official college records.

Graduation date for the purpose of this study was the date in month and year the student graduated from Mountwest Community and Technical College (MCTC). This information was documented from the student's official college records.

Date of first MCTC course for the purpose of this study was the date the student first enrolled in an MCTC college course. This information was documented in month and year.

Developmental education (DE) hours for the purpose of this study was the number of semester credit hours of DE a student took as part of degree completion and was noted in number of semester credit hours as documented on the official college records.

Stop-out students for the purpose of this study are defined as students who temporarily drop out of MCTC from one academic year to another. For students who were previous stop-out

students, but returned to college to complete their degree, the period of time in months that they did not attend college at MCTC was noted.

Significance of Study

This study is of value to administrators, advisors and students. It identifies the types of prior learning activities that correlate with degree completion for adult students. This study generated a profile of the types of prior learning assessment (PLA) most frequently used as well as the student characteristics that correlate with successful degree completion through the application of PLA. Results can be used to develop new administrative policies and procedures that guide advisors, faculty and staff in recruiting and retaining adult students. In addition, administrators at Mountwest Community and Technical College and other peer institutions can use this information in decisions involving resource allocation, future institutional strategic planning and program development.

Delimitations and Limitations

This study is delimited to those graduates at Mountwest Community and Technical College (MCTC) between the academic years 2006 to 2011 (July 2006 through May 2011). From 2006 to 2008, MCTC was administratively linked to Marshall University and was officially Marshall Community and Technical College. After SB 3515, a legislative mandate in 2008 that restructured the West Virginia Community College System, the official name of the community college was changed to Mountwest Community and Technical College. Credits earned in the various types of PLA were (a) portfolio assessment, (b) standardized examinations, (c) ACE-C, (d) ACE-M, and (e) institutional or state credit evaluations.

One limitation of this study is the use of the researcher's own institution as the study population. Researcher bias was minimized through the use of extant data from historical

sources, and data were analyzed quantitatively. No subjective evaluation of data was necessary in the coding or analysis of the results.

An additional limitation of this study is a perceived inability to generalize beyond the study institution. This limitation was controlled through the ability to create peer institutions within the higher education reporting system, Integrated Postsecondary Education Data System (IPEDS). From this reporting system, comparison groups may be generated from across the country (National Center for Educational Statistics, 2011).

CHAPTER 2: LITERATURE REVIEW

This chapter provides the historical groundwork that documents the value of experiential learning (EL) through the lens of adult learners' experiences. The recognition of this prior learning through meaningful assessment is the foundation of prior learning assessment (PLA), and gives credence to the application of PLA toward degree completion in community colleges. Information is organized to highlight not only the pivotal role that differing categories of PLA play in degree completion, but also to document the relationship between student characteristics and various categories of PLA. Through this process, institutions of higher education will gain critical information concerning the types of PLA that are most useful to them, in order to make data-driven policy decisions that will guide their students to degree completion in the most efficient manner.

Prior learning assessment and the recognition of those experiences outside a traditional classroom provides an opportunity for adult learners to complete their postsecondary education through the awarding of these experiences to appropriate college level credit. The theoretical framework that supports this study of PLA includes adult learning theory (ALT) and experiential learning theory (ELT).

The Nature of Adult Learning

Andragogy, the "art and science of helping adults learn" (Henschke, 2011, p.34), has a long history shaped by research and philosophical discourse. First in Europe and then in the United States, andragogy influenced the way educators interact with nontraditional students and create valuable learning environments (Knowles, Holton & Swanson, 1998).

When speaking of adult learning, a review of the literature and educational data sources demonstrates that there is no standard definition for the term adult student, which is frequently synonymous with nontraditional student. According to the National Center for Educational

Statistics (NCES) (National Center for Educational Statistics, 2011), nontraditional students are placed in this category due to family situation and chronological age. “Adult students have family and work responsibilities, as well as other life circumstances that can interfere with successful completion of educational objectives” (National Center for Educational Statistics, 2011, para. 1). Yet Nolan and Skidmore (2010) defined adult students as those individuals between the ages of 24 and 44 regardless of family situation. Klein-Collins (2010) described adult students as “all students 25 and above” (p.6), and frequently used the terms adult student and nontraditional student interchangeably.

The recognition that adult students learn differently from children created a paradigm shift in the educational community. American educational theory was transformed primarily through the works of Malcolm Knowles in the mid-1970s, who incorporated the word andragogy into his current adult learning theory. According to Knowles (1970), the theory of andragogy sharply contrasts the unique learning needs of adults from those of children.

Although Malcolm Knowles is often considered the father of andragogy, educators in Europe had applied this philosophical approach to teaching adults for several years prior to Knowles’ work (Knowles, 1970; Knowles et al., 1998; Reischmann, 2005). In support of the artistic stream of inquiry that emerged in the early 20th century, Lindeman (1926) espoused the philosophy of andragogy as key for teaching adult workers. This philosophical view reasoned that the manner in which adults acquire new knowledge is best described through intuition and analysis of experience (Lindeman, 1926; Knowles et al., 1998). This approach laid the foundation for Lindeman’s key assumptions in adult learning, which include: (a) adults are motivated to learn when they experience needs and interests that are satisfied by learning; (b) adults are life-centered and learning should be directed on experiences, not subjects; (c) adults

are rich in experiences and these should be central to adult learning; and (d) adults are self-directed.

As adults age, individual differences emerge (Knowles et al., 1998). In this process, Lindeman (1926) affirmed that experience is the highest valued resource to these adult learners. Adult education, therefore, as opposed to pedagogy, should consist of unique experiences and knowledge created through original thought from the adult. “If education is life, then life is also education.....experience is the adult learner’s living textbook” (Lindeman, 1926, p. 37). Lindeman went on to say that in the process of learning, it is necessary for the learner to become acutely aware of these experiences and evaluate their place in the learner (Knowles, et al., 1998). This philosophy speaks to the essential place reflection has in the adult learning process.

Knowles (1970) credited much of his thought on adult learning theory to these earlier works by Lindeman (Knowles et al., 1998). Building on Lindeman’s key characteristics, Knowles (1970) affirmed that adult learners have the following characteristics: (a) self-directedness, (b) an accumulated reservoir of experiences that become a resource for learning, (c) readiness to learn and grow orientation to the developmental tasks of learner’s social roles, (d) application of knowledge that is increasingly tied to the application of problem centeredness, (e) internal motivation to learn and (f) the need to know why something should be learned (Knowles, 1970, 1989; 1990; Knowles et al., 1998).

As demonstrated, a consistent element of ALT is the emphasis placed on the prior experiences of adult learners. In accordance with ALT, prior experiences are the basis upon which new knowledge construction is built (Knowles, 1970; Knowles et al., 1998; Lindeman, 1926). The emphasis placed on the prior experiences of adult learners and the necessity of building on these experiences to create new knowledge will dovetail into later discussions on experiential learning and prior learning assessment. Regardless of those who came before him,

in the United States and later abroad, Malcolm Knowles catapulted andragogy to the forefront in the mid-1900s by infusing andragogy into his existing adult education theory and sparked a revolution in the adult learning community (Brookfield, 1986; Feur & Gerber, 1988).

Experiential Learning

Theories describing the learning process are numerous. Within the field of learning theory, a number of leading theorists recognize the value of experience in the acquisition and deepening of knowledge (Dewey, 1938/1997; Knowles, 1970; Kolb, 1984; Mezirow, 1991; Rogers, 1969). In their view, learning may be achieved in everyday life experiences through informal events that happen in an individual's life, which may be structured or unstructured activities. The recurring theme is that learning is not confined to a formal classroom but rather is a result of reflective thought and synthesis of the events that make up the learned experience. This process can happen in any setting at any time by anyone. According to Houle (1980), experiential learning is "the way that most of us do our learning" (p. 221). Seminal work by John Dewey (1933, 1938) in the area of experiential learning laid the groundwork for later studies in experiential learning by David Kolb (Houle, 1980, 1996; Kolb, 1984).

The salient point of experiential learning is that through past experiences, connections are forged between what a student knows and the new knowledge created from new experiences. "The beginning of instruction shall be made with the experience learners already have...this experience and the capacities that have been developed during its course provide the starting point for all further learning" (Dewey, 1938, p. 74). This "continuity in inquiry" (Dewey, 1938, p. 140) meant that the conclusions reached through one experience become the foundation for the next. The construction of new knowledge in this manner underscores the importance of the ever-changing environment where every item, person or place becomes a stimulus for learning.

Argyris (1982) and others (Schon, 1987) note, nonetheless, that, for the adult learner, experience is a double-edged sword. A wealth of prior knowledge brings to the learner a rich source of skills and knowledge that can be the foundation for new knowledge. Adults have a natural tendency to resist this new learning that challenges existing schema (Argyris, 1982; Schon, 1987), in part because their existing knowledge may be in opposition to new information received and may become a source for internal conflict. Wagemans and Dochy (1991) noted that many adults have difficulties in learning from experience because previous routines, practices and values hinder the learning process, and in these cases require what Kurt Lewin (1951) called unfreezing. The unfreezing stage is the first step in Lewin's change theory, which is followed by change and refreezing. Both freezing and unfreezing are necessary steps in the learning process. Kolb (1984) argued that for adults with a wealth of prior experiences, all learning is relearning because learning is continuous (Kolb, 1984). Therefore, the unfreezing and refreezing occurs in a continuous manner and any conflict is resolved in this continuum.

Transformative nature of experiential learning

The ability of prior experiences to be transformative is well documented in the literature. Optimum learning requires a fundamental change in the way the learner perceives the relationship between the world and the self (Burton, 1963; Crow & Crow, 1963; Haggard, 1963; Mezirow, 1990; 1991). "Learning is change due to experiences" (Harris & Schwahn, 1961, pp. 1-2), and at the heart of the learning process is a cycle of change and reflection (Fjortoft & Zgarrick, 2001). Kolb (1984) also acknowledged the transformative nature of learning and stated that learning is "the process whereby knowledge is created through the transformation of experience" (p. 38). Pittenger & Gooding (1971) said that learning is a process of discovering one's personal relationship to and with people, things and ideas. Rogers (1969) noted that in

order to best learn applied knowledge an integrated awareness of personal involvement, self-initiation and personal reflection must occur.

All these views provide affirmation that both experience and change are critical to the learning process, and that, in the process of learning, a profound transformation occurs within the learner due to these experiences. As stated, internal strife, conflicts and contradictions drive the learning process as the student attempts to resolve inconsistencies through reflection, emotions, action and thinking. In summary, experiences are both the bridge to new knowledge and the glue that binds the experiences to existing knowledge in a holistic manner.

Models of experiential learning

Experiential learning models describe experience as an essential part of the learning process (Dewey, 1938/1997; Lewin, 1951; Kolb, 1984). Among the models of experiential learning, two of the most studied are Dewey's experiential learning model (Dewey, 1938/1997) and Kolb's experiential learning model (Kolb, 1984). Both models are graphical depictions of the learning process and represent a dynamic interaction between the learner and the concrete experience.

Dewey (1938/1997) envisioned learning in three steps that cycle between judgment (J), knowledge (K), observation (O) and impulse (I) (Figure 1). Impulse drives observation, which drives knowledge that drives judgment. The creation of new knowledge in this process and the subsequent judgment that ensues act as a base for when the learner encounters a new experience. The cycle then begins again as this knowledge base influences interpretation of successive experiences.

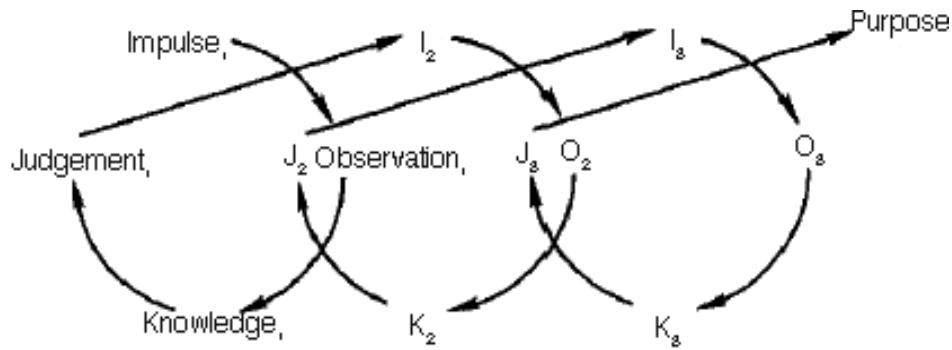


Figure 1. Dewey's Model of experiential learning (Kolb, 1984, p. 23).

Kolb's model (1984) also visualizes the learning process as a cyclic model. The model includes (a) concrete experiences, (b) testing implications, (c) formal abstract concepts, and (d) observations and reflective action. By reflecting on learned experiences, learners are able to articulate learning and to understand the process of learning in relationship to prior experiences (Bergsteiner, Avery & Neumann, 2010).

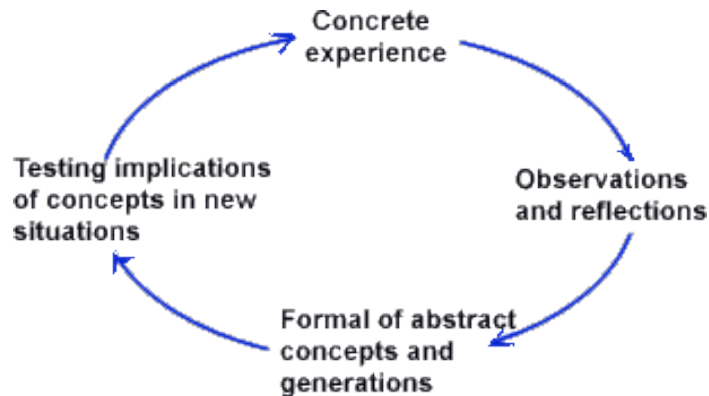


Figure 2. Kolb's Model of Experiential Learning (Knowles et al., 1998, p. 147).

Critics of these experiential learning models argued that Dewey's model views the role of experiences in the learning process as too limiting (Kolb, 1984), whereas others have pointed out that Kolb's two-dimensional cyclic model process is inaccurate and there exists too little validation of this theory (Cornwell & Manfredro, 1994). Still others noted that Kolb's model does not take into account cultural or gender differences inherent among diverse learner populations (Michelson, 1996). Despite these criticisms, learning theories such as Dewey's (1938/1997) and

Kolb's (1984) allow for a theoretical basis for research in experiential learning and a framework for constructing multi-course curricula or single courses focused on adult education (Knowles et al., 1998).

Prior Learning Assessment: Definitions and Background

Scholarly work in the area of experiential learning advanced the understanding of prior learning assessment (PLA). Zucker et al. (1999) stated that prior learning assessment (PLA) “refers to any knowledge-building or skill-attaining that occurs prior to enrollment or outside of a postsecondary institution, assessed for the purpose of awarding college credit” (p. 3). Brigham and Klein-Collins (2010) define PLA as a systematic process used by postsecondary institutions to award college credit for those skills gained outside a traditional classroom setting. These could, and often do, include hobbies, community activities, employment and/or military training. Lamoreaux (2005) adds that the process of awarding credit for prior learning presumes that the learning evaluated is comparable to college level work.

As these definitions outline, prior learning occurs through a variety of life experiences such as volunteerism, work experiences, and parenting. Non-credit courses and independent study are also included because all these experiences have the potential to add to the individual's knowledge base. As noted by Kamenetz (2011), “...PLA credits bridge the gap between classroom and real world” (para. 8). Nonetheless, the distinction must be made between experience and learning for credit that is awarded for life learning not for life experiences, making this difference important for appropriate assessment and consistency. Nationally, the various types of PLA fall into four categories: standardized exams; individual course challenge examinations offered within individual postsecondary institutions; assessment of military and professional courses; and individualized assessment, often seen as portfolio assessments

(Brigham & Klein-Collins, 2010; Dagavarian & Walters, 1993; Klein-Collins, 2006; Zucker et al., 1999).

The roots of PLA and the acceptance of PLA for college-level credit began with the end of WWII and the return of military service men and women to the United States. During this time, an increase in the number of adults entering higher education was seen as being primarily due to the change in how higher education was generally viewed. These societal changes included an increased demand for a skilled, qualified workforce where higher education was seen as a necessity. In addition, an increase in the number of women and minorities seeking higher education, along with returning veterans, created the need for additional postsecondary training between 1968 and 1973. At this time, credit for prior learning began to be seen as an avenue to decrease time to graduation for these students (Aslanian, 2001; Keeton, 2000; National Student Clearing House, 2012; Travers, 2011; Zucker et al., 1999).

An additional phenomenon of the early 1970s was the increased mobility of students. Therefore, documentation and transferability of prior learning became increasingly important for degree completion (Harris, Breier, & Wihak, 2011; National Student Clearinghouse, 2012; Seamann, 2008). This observation still holds true; nationally, one-third of all students attend more than one institution over the course of their college career (Kamenetz, 2011). In addition, according to Carevale, Smith and Strohl (2010), almost two-thirds of the funds spent in postsecondary learning environments occur in the workplace. According to Kamenetz (2011), the current system is not designed to meet the needs of the new learner, nor is it able to accept many of the new learning methods available. Being able to reduce redundancy as well as the associated costs is more important than ever as the value of a college degree increases. There still remained, nonetheless, a challenge in finding an authoritative and appropriate method for

assessing prior learning experiences that could be uniformly certified by college officials for college credit.

According to Zucker et al., (1999), the national standardized testing movement became a mechanism by which these credits could be applied, and thereby introduced PLA as a recognized method for the attainment of college credit. PLA became a way for “credible college-level learning” that was both “measurable and independent of its source” (p. 1; Dagavarian, 1993; Fugate & Chapman, 1992). Emerging was an awareness of PLA as a mechanism to honor the prior experiences of mature adults through the consistent college-level assessment of prior learning nationally and across the globe (Conrad, 2008; Harris et al., 2011). In recognition of the global impact of PLA, The United Nations Educational, Scientific and Cultural Organization (UNESCO) also embraced the CAEL definition of prior learning and continues to promote PLA throughout the world (Conrad, 2008, 2010). In many of these countries, according to Thomas (1998), the R (recognition) is added to PLA, in order to emphasize the role assessment plays in the validation of non-formal learning and the subsequent application of these credits to the students’ official college transcript.

Essential to the acceptance of PLA was the establishment of formal guidelines for the recognition of informal work. As Fiddler, Marienau and Whitaker (2006) noted, assessment of student learning is best when the process involves a set of logical decisions and “not an idiosyncratic moment of judgment” (p. 10). The first guidelines for the formal recognition of prior learning through informal experiences were documented by Willingham (1977) in *Principles of Good Practice in the Assessment of Experiential Learning*. The basis of this text later became the foundation and guide for practitioners and accrediting bodies on PLA procedures (Whitaker, 1989; Fiddler et al., 2006). These standards addressed the policies and

procedures institutions should include if they are to be involved in the awarding of academic credit for prior learning.

According to Fjortoft and Zgarrick (2001), the single most important standard is the clarity of learning outcomes. “In order to appropriately assess prior learning and match it with specific coursework, it is imperative that objectives and learning outcomes are articulated and communicated to the students” (Fjortoft & Zgarrick, 2001, p. 46). Building on this premise, the ten standards for quality in PLA as defined by Whitaker (1989) are:

1. Credit should be awarded only for learning, and not for experience;
2. College credit should be awarded only for college-level learning;
3. Credit should be awarded only for learning that has a balance, appropriate to the subject, between theory and practical application;
4. The determination of competence levels and of credit awards must be made by appropriate subject matter and academic experts;
5. Credit should be appropriate to the academic context in which it is accepted;
6. Credit awards and their transcript entries should be monitored to avoid giving credit twice for the same learning;
7. Policies and procedures applied to assessment, including provision for appeal, should be fully disclosed and prominently available;
8. Fees charged for assessment should be based on the services performed in the process and not determined by the amount of credit awarded;
9. All personnel involved in the assessment of learning should receive adequate training for the functions they perform, and there should be provision for their continued professional development; and

10. Assessment programs should be regularly monitored, reviewed, evaluated, and revised as needed to reflect changes in the needs being served in the state of the assessment art (Willingham, 1977; Whitaker, 1989; Fiddler et al., 2006).

The first five of these standards address the assessment process itself, while standards six through ten pertain to the administration of the credits awarded. All speak to the assurance of quality in the process and administration of prior learning assessment programs in order to verify that college level credit is appropriate.

The value to adults in the recognition of their prior learning goes beyond merely receiving college credit. Knowles (1984) stated that “to children, experience is something that happens to them. To adults, experience is who they are” (p.58). Adults seek validation and worth through acknowledgement of their past experiences. Value gained includes a greater personal understanding of the past experiences, acquisition of additional skills and a higher level of competency, and the motivation to return to postsecondary education. Consequently, any situation that devalues or minimizes the worth of these experiences may be perceived as a rejection of their experiences and a denial of their identity and individuality (Knowles et al., 1998; MacKeracher, 1996).

Types of prior learning assessment

Just as the experiences can take various forms, so do the assessment methods available to evaluate these experiences. Common modes of PLA include individualized assessment, i.e. portfolios; institutional, corporate assessments and individualized customized examination; American Council on Education (ACE) credits, i.e. military and corporate training; and standardized examinations, i.e. College Level Examination Program (CLEP) exams, Advanced Placement (AP) examinations, and Defense Activity for Non Traditional Education Support

(DANTES) exams. It is this recognition through quality assessment that is most significant to adults in their journey to a college degree.

Individualized Assessments and Portfolios

Individualized assessments of student learning are customized evaluations based on institutional courses or programs. Often these are course final examinations that document the level of a student's competency in a subject without the student taking the formal course. Other examples include non-formal learning opportunities that are evaluated at either the state level or the institutional level that are applied for college-level credit. These examinations may be customized based on local industry training (Klein-Collins, 2010). A third type of individualized assessment is the portfolio assessment, which has received considerable interest over the last decade not only for its usefulness in degree attainment but for the transformative nature of these assessments (Burriss, 1997; Geerling, 2003; Lamoreaux, 2005; Stevens et al., 2010). Portfolios are a collection of artifacts describing experience and learning. These are typically documents, letters of verification, or essays describing specific situations or experiences, and they document non-formal, non-collegiate activities (Fjortoff & Zgarrick, 2001; Klein-Collins, 2010). These provide a mechanism for the learner to demonstrate his or her knowledge in a particular area (Conrad, 2008; 2010).

The value of portfolios from a student's perspective is that they serve as a means to archive learning milestones. Through the process of carefully articulated reflection, in which connections with prior experiences are connected to learning, the learner's cognitive growth can be documented. The learner's "learning histories give rise to new knowledge—of self, or self-situated within the trajectory of growth, and of self-situated within the profession" (Conrad, 2008, p. 142).

Portfolio assessment is offered by the majority of institutions that offer credit for prior learning (Gaerte, 1992; Klein-Collins, 2010; Zucker et al., 1999). Ironically, though, portfolio assessments also represent the smallest category in terms of credits awarded for prior learning, while standardized tests rank the highest (Fjortoft & Zgarrick, 2001; Kamenetz, 2011).

Michelson et al., (2004) found that due to the time-intensive nature of portfolio assessments and the necessity of utilizing expert evaluators, many institutions are under pressure to channel those students interested in PLA toward less costly forms of assessment, i.e. standardized tests and course-specific assessments. This conclusion gives credence to other similar findings that indicate the low numbers of portfolio assessments as a percentage of total PLA credits in U.S. postsecondary institutions (Klein-Collins, 2010) and Canadian postsecondary institutions (Aarts et al., 1999).

Conrad (2008) cautioned that care should be exercised in the use of portfolios in the PLA process. The caveat to the use of portfolios is the realization that portfolio guidelines are created by an institution for use by that institution. In this capacity, limitations to the use of portfolios within a program of study are confined within these institutional guidelines. The “portfolio criteria and outcomes serve as a guidelines and structuring devices rather than as hard-and-fast targets” (p. 142). In this way portfolios are the guides for students to use in organizing their own learning (Conrad, 2008).

Nonetheless, portfolio assessments may not be the best assessment tool for all students or institutions. Portfolio assessments are best suited to courses that are grounded in practice rather than theoretical (Koenig & Wolfson, 1994). Furthermore, because of the labor-intensive nature of portfolio development, PLA that rely on portfolio assessments are vulnerable to socioeconomic realities (Michelson et al., 2004) and student characteristics (Fjortoff & Zgarrick, 2001; Seid, 1999). Those students with excellent writing and organizational skills have an

advantage over those less gifted in these areas. The result is that the portfolio may not accurately reflect the level of learning for a student with weak or mediocre writing skills. For these reasons, large groups of students may be disadvantaged by this method of PLA (Fjortoff & Zgarrick, 2001; Seid, 1999).

Reflection in the PLA Portfolio Process

In order for the learner to have a meaningful experience through the portfolio assessment process, appropriate critical reflection is necessary. It is through this critical reflection that prior learning is articulated into a written format for formal assessment via the portfolio process. Both adult learning theory (ALT) and experiential learning theory (ELT) reiterate the critical involvement of reflection. Eyler (2002; 2009) and others (Fenwick, 2000; 2001; Lamoreaux, 2005; Mezirow, 1990; 1991; 2000) noted the necessity of reflection in the process of creating new knowledge from prior experiences. Lamoreaux (2005) said it best when she stated that reflecting enables “learners to objectify formerly subjective perspectives, raising them to awareness where they can be identified, explored, and questioned” (p. 3).

Reflection is more than simply introspection as it includes critical evaluation of one’s views, actions, and beliefs. However, experience alone does not generate new learning. Learners must critically evaluate, reflect upon, appropriately validate, and effectively act on their (and others’) beliefs, interpretations, values, feelings, and ways of thinking to relate new situations to previous ones (Brookfield, 1987; Mezirow, 1990; 1991; Simosko (1988). Mezirow (1991) continued to say that “reflection is the central dynamic of intentional learning, problem solving, and validity testing through rational discourse” (p. 99). Mezirow contended that there is a lack of clarity in the meaning of reflection as used in learning theories versus that which is used in psychological theories. As he explained, learning theorists use reflection to describe

thoughtful action, whereas in reality one may have meaningful reflection without thoughtful action.

Reflection ties into the importance of validity, which is another key principle of ALT (Knowles, 1970; Knowles et al., 1998). Adult learners need to see the soundness in a subject before undertaking that activity. At the center of this concept is the development of self-awareness, an understanding of the learner's personal needs through introspection and analysis. "Students take the time to reflect on, assimilate, and integrate what they've learned and think about how it fits with their future goal" (Kamenetz, 2011, para. 10). Through this reflection, adult learners discover for themselves the gap between what they know and what they need to know, or the relationship "between where they are and where they want to be" (Knowles et al., 1998, p. 65). Walker (1985) noted that articulating these reflections through writing, in particular, enhances the learning for those students who complete the prior learning portfolio.

Reflection is a natural application of rational problem-solving (Dewey, 1938). In Dewey's model of experiential learning, experience, reflection and subsequent action are cyclic in nature and build on each other as greater experiences are encountered. As additional reflection is undertaken, further action follows. The essence of this model is that learning cannot occur without structured, thoughtful reflection on the experiences. Speaking to the importance of reflection in the learning process, Dewey (1916) said, "No experience having a meaning is possible without some element of thought" (p. 150). Dewey (1933) continued to define reflection as the "active, persistent and careful consideration of any belief or supposed form of knowledge in the light of the grounds that support it and the further conclusion to which it tends" (p. 9).

Kolb's learning theory also relies heavily on the role of reflection in the learning process. Reflection makes learners' tacit knowledge explicit, and in doing so, makes it more readily

available for problem solving (LeGrow et al., 2002). The reflective process has an added value in empowering students to think creatively and to be flexible in new situations. The analytical detachment required in productive reflection empowers students to act independently while drawing their own conclusions from their experiences (Kolb, 1984). Through this process, the knowledge is embedded for greater retention at some future point (Houle, 1980).

ACE and Standardized Examinations

Validating prior learning through the awarding of college credit is nothing new. As early as 1945, prior learning assessment for high school equivalency has been credentialed through the American Council for Education (ACE) (American Council for Education, 2011; Harris et al., 2011; Travers, 2011). The General Education Record (GED) program sponsored by ACE through the Office on Educational Credits and Credentials (OECC) allowed for adults to document prior knowledge, gained through experience or non-formal education, into high school credits. The Commission on the Accreditation of Service Experiences (CASE) followed with their recognition of prior learning gained through military service. Together these efforts supported the initiation of prior learning into American higher education through a formal assessment process (ACE, 2011; Harris et al., 2011; Travers, 2011).

It would be nearly 30 years later in 1974 that OECC and CASE would join forces to become the Commission of Educational Credits and Credentials (CECC). The purpose of this new organization was to assist postsecondary institutions in the assessment of college-level learning that was acquired outside a traditional classroom experience. Credit recommendations for non-college formal training that takes place in the corporate or military setting continues to be published by ACE (American Council on Education, 2011; Klein-Collins, 2010).

Nationally standardized examinations in a variety of subjects are offered by nationally recognized organizations, e.g. the College Board and Chauncey Group. According to Klein-

Collins (2010), these include Advanced Placement (AP) examinations, College Level Examination Program (CLEP) tests, and Defense Activity for Non Traditional Education Support (DANTES). Freed (2006) reported that the majority of postsecondary institutions in his study preferred standardized exams and ACE credit awards when applying PLA. Michelson et al., (2004) noted that the strong historical tradition of these types of prior learning give credence to their use without negative scrutiny from other higher education institutions. This tradition could explain the finding in Klein-Collins (2010), and noted by Fjortoff and Zgarrick (2001), that the largest percentage of PLA credits are awarded in this category.

Research in Prior Learning Assessment

As noted by Smith (2002) and confirmed through a current literature search, scholarly research in the area of PLA is limited. He makes the further observation that there is also “...little known about the students who have utilized PLAR within the postsecondary setting” (Smith, 2002, p. 49). Travers (2011) also noted in a recent publication of the National Institute of Adult and Continuing Education (NIACE), that in the United States and globally, “research in Prior Learning Assessment is limited” (p. 249). Published studies, including doctoral dissertations, have focused on undergraduate students, either combining associate and baccalaureate degree seekers together, or focusing on baccalaureate degree seeking students alone. In a recent interview with Rebecca Klein-Smith and Catherine Brigham (personal communication, November 8, 2011), leading scholars in the field of PLA, they concurred that little research has been conducted in the U.S. on the application of PLA to college completion, and still less on the relationship among various student characteristics, types of PLA and degree completion (November 8, 2011). These discussions confirm that PLA is an emerging field, and there remains much to learn about the influence of PLA on higher education.

Studies by Klein-Collins (2006, 2010) and Brigham and Klein-Collins (2010) sought to examine the relationship between PLA and degree completion in North American postsecondary institutions, focusing primarily on institutions in the United States. In the most comprehensive of these studies (Klein-Collins, 2010), the academic records of students 25 years old or older at 48 postsecondary institutions (47 across the U.S. and one in Canada) were surveyed. Participating institutions fell into one of three types of degree granting institutions: confer baccalaureate degrees only, confer associate degrees only, or confer both baccalaureate and associate degrees. Among these 48 institutions only seven were community colleges, and none included the Appalachian region of the U.S. that includes West Virginia. The greatest limitation of the study was that it was not designed to identify individual types of PLA that correlate with degree completion, but rather evaluated all forms of PLA as one variable. Nonetheless, the study identified key factors in the use of PLA toward degree completion at these participating institutions and remains a pivotal study on PLA in the U.S.

A subsequent study by Brigham and Klein-Collins (2010) more closely examined the relationship of PLA and college completion in 88 community colleges throughout the United States. Valuable information was generated from this study that furthered the scope of knowledge in PLA research in America. Nonetheless, this study, as with the Klein-Collins (2010), failed to identify the types of PLA that correspond to student persistence or graduation in postsecondary institutions.

In a corresponding Canadian study conducted the previous decade during the 1993-1994 academic year (Aarts et al., 1999), over 3500 students who used prior learning to fulfill degree requirements were examined. In this study these postsecondary institutions, much like in the American study (Klein-Collins, 2010), represent an important sampling of the Canadian institutions that offer programs to recognize prior experiences for academic credit. Also similar

to other American studies (Brigham & Klein-Collins, 2010; Klein-Collins, 2010), Aarts et al., (1999) did not examine each of the types of PLA individually, but rather combined all types of PLA together when evaluating the impact associated with student characteristics and degree completion as a result of the use of PLA. This important limitation stresses the need for further studies in the area of PLA that untangles and describes these potentially critical relationships.

PLA and time to degree completion

Studies on the impact of PLA in postsecondary institutions (Aart, 1999; Brigham, 2010; Klein-Collins, 2010; Pearson, 2000 and 2004; Sargent, 1999; Swift, 1984) reported better academic outcomes from students who were awarded PLA credits toward their academic degrees compared to non-PLA students. Among the findings was the report that PLA students had higher graduation rates in both baccalaureate and associate degree programs (Aart, 1999; Billingham & Travaglini, 1981; Brigham & Klein-Collins, 2010; Klein-Collins, 2010; Sargent, 1999) and had higher grade point averages upon graduation (Aarts, 1999; Brigham & Klein-Collins, 2010; Klein-Collins, 2010). Many of these students graduated in half the time and in some instances three to four times more quickly than comparable non-PLA students (Klein-Collins, 2010). A similar study conducted at Central Michigan University (Billingham & Travaglini, 1981) examined the relationship between PLA and college completion. The results revealed that the greatest predictor of student persistence to baccalaureate degree completion was credits transferred into the university, or PLA credits applied to the student's transcript.

These findings are not surprising. Awarding credits for prior learning not only decreases the number of classes required for graduation, but PLA students also feel a greater connection to the institution through validation of their past experiences (Christensen, 1991; MacKeracher, 1996). Christensen (1991) found that academic institutions that are flexible in their scheduling, credit transfer policies and course availability had greater student satisfaction. He and others

(Snyder, 1990) noted that the students who were allowed to use different strategies for earning credit (such as CLEP) were more likely to persist and graduate (Christensen, 1991; Snyder, 1990).

In short, any situation that devalues or minimizes the worth of these experiences may be perceived as a rejection of adult students' experiences and a denial of their identity and individuality; whereas in contrast, acceptance of the experiences through the awarding of college credit gives value and confidence (Knowles, et al., 1998). This view is particularly relevant given that according to Tinto (1975, 1993, 1997), two factors influence student persistence within an institution: social integration and academic integration. Academic integration is defined as a competent membership in the college community (Tinto, 1993). As demonstrated, PLA represents the academic integration of adult students into the institution through the acknowledgment of their competence in an academic subject through the application of college level credits.

Pascarella and Terenzini (1979) tested Tinto's longitudinal model of student persistence (1975) and confirmed the predictive value of social and academic integration. They found that students were more likely to stay at their institution and persist to degree completion if they were engaged in institutional activities and found their college interesting. In addition, they found that students who found practical applications to their class work and were able to tie these activities to real-world situations were more likely to persist. As predicted by Knowles' ALT (1970), Barrett (2010) also noted that among students enrolled in a community college, the higher the level of academic integration the greater their intention to remain in school. It stands to reason, therefore, that once credit for prior learning is awarded, students perceive a greater sense of value to the remaining coursework required for degree completion and a stronger desire to

remain in school, thus explaining the greater degree of persistence and graduation in this group of students.

Portfolio assessment and time to degree completion

Of the types of PLA credits available at postsecondary institutions, portfolio assessments are the least likely to be utilized (Fjortoff & Zgarrick, 2001; Klein-Collins, 2010). Nonetheless, as discussed earlier, portfolio assessments have the capacity to create a transformative change in students by altering their self-awareness, confidence, and sense of value (Burriss, 1997; Geerling, 2003; Lamoreaux, 2005; Stevens et al., 2010). Data at Simpson College (Pearson, 2000) reported that students were 72% more likely to persist to a baccalaureate degree when portfolio assessments were used to apply college credit. Pearson (2000) noted that “completion of the PLA portfolio assessment doubles the odds of persistence for an average student in this study” (Pearson, p. 131). Similarly, Fonte (2008) found that over the course of 10 years, students completing a PLA portfolio graduated at an 88% rate while the national average is 55%.

PLA, biological sex and degree completion

As discussed previously, few prior studies have explored the relationship between the awarding of credit for prior learning and degree completion when examined through the lens of various student characteristics, such as age, biological sex and race/ethnicity. Aart (1999) reported in the descriptive analysis of the Canadian study that an overwhelming number of students in the test population were biological females (65%) and mature adults (52% over the age of 30). Other studies (Klein-Collins, 2010) report a more equal population, with 48% of the PLA students being biological female (52% biological male).

These data and others (Pearson, 2000, 2006) further report that, regardless of biological sex, students applying PLA for degree completion were more likely to persist to graduation and to complete their degrees in less time than those students who did not apply PLA credits. Stemm

(2009), in contrast, documented in her study of over 45,000 undergraduate students at a private for-profit university that there is a significant difference between biological sex in the use of PLA in degree completion for undergraduate students, with biological females applying PLA to a greater extent than biological males (Stemm, 2009). None of these large studies examined the relationship between all the types of PLA used toward degree completion and these characteristics but, rather, reported for all types of PLA as one variable or examined just one type of PLA credit.

PLA, Race/ethnicity and Degree Completion

The few studies that explore the relationship between PLA and degree completion for students of color and other minorities report similarly successful outcomes for all racial/ethnic groups when students participate in PLA opportunities (Klein-Collins, 2010). Noteworthy in the findings is that for specific minorities the value of PLA is magnified. Klein-Collins (2010) reported in her multi-institutional study of over 62,000 students that White non-PLA students graduated with a baccalaureate degree at a rate of 14% whereas their PLA counterparts graduated at a rate of 44%. Although associate degree attainment is not as striking, 10% for non-PLA compared to 14% with PLA, the improvement is still a significant increase representing a marked success for these students.

Klein-Collins (2010) also reported that White, non-Hispanic PLA students graduate with an associate degree at nearly twice the rate of non-PLA students (9% non-PLA compared to 16% PLA) and 2.5 times higher with a bachelor's degree (17% non-PLA compared to 40% PLA). The benefits of PLA are even further magnified for Hispanic PLA students. Klein-Collins (2010) reported that Hispanic non-PLA students in the study graduate with associate degrees at a rate of 6%, whereas Hispanic PLA students graduate at a rate of 17%. For those attaining a

baccalaureate degree, PLA students successfully graduate at a rate of 47%, whereas those not applying PLA graduate at 6%, which is below the White, non-Hispanic rate of 10%.

Summary

Wolfson (1996) stated that “PLA represents a major shift in both paradigm and process” (p. 6), and as Michelson (1997) noted, through the PLA process “the relationship between the faculty, students, and the institution” is changed (p. 41). These observations are especially true in the U.S. where the traditional delivery of college level coursework is firmly grounded in our education system. Despite the increase in application of PLA toward college completion, there still remain areas within the research of PLA that are unexplored. For example, although it has been documented that application of PLA correlates strongly with an increased likelihood of graduating from college (both a baccalaureate and an associate degree), there is limited research into the types of PLA that are of greatest benefit. In addition, it has been shown that minority students in particular graduate at a higher rate when PLA credits are applied. Nevertheless, the types of PLA that best serve these students still remain unidentified.

As valuable as these studies are to advancing the body of knowledge in PLA research, there remains a failure to elucidate the types of PLA that benefit the students. The paucity of studies into the relationship between these critical student characteristics and successful completion of college through the application of prior learning lends credence to the importance of this study to the body of knowledge in PLA research.

CHAPTER 3: METHODS

The purpose of this study was to explore the role of various types of prior learning assessments (PLA) on time to degree completion in postsecondary higher education institutions and the characteristics of students most likely to benefit from PLA. This analysis was accomplished through an examination of official student records at Mountwest Community and Technical College for the academic years 2006 through 2011 (August 2006 through May 2011).

Design

This descriptive research was a case study designed to elucidate the correlation between types of PLA and net time to degree completion. Descriptive statistics are the first line of statistical analysis and are a way to condense large sets of observable data into smaller sizes that are more easily interpreted. Descriptive research speaks to the current state of the situation and is a way to summarize, describe and organize the information (DePoy & Gitlin, 1998; Kovacs, 1985). According to Eisenhardt (1989), case studies are valid research methods to test or generate theories. By performing regression analysis on each of the proposed predictors with net time to degree completion, the relationship between these factors was defined.

There have been critics of single college studies (Bailey & Alfonso, 2005). Nonetheless, Bean (1986) and Tinto (1975) stated that persistence within an institution is specific to that institution. This view is due in part to the uniqueness of the academic and social environment, but also due to the many other unique factors that characterize an institution, such as geography and traditions. The single institution case study model allows for control of these extraneous factors while permitting the collection of large amounts of data. By utilizing the resources of the Integrated Postsecondary Education Data System (IPEDS), the data generated may be

generalized to other populations within the college's peer group (National Center for Educational Statistics, 2011).

Population and Sampling

The population for this study included all graduates from Mountwest Community and Technical College (MCTC) between the academic years 2006 through 2011 with PLA credits posted to their official college transcripts. Data for the study were collected via a historical assessment of college records for the five academic years from July 2006 to May 2011. During this time frame, 1769 students graduated from MCTC. Of these graduates, 19% (329 students) used one or more of the categories of PLA toward graduation. Graduate transcripts were sequentially numbered beginning with the number one. These transcripts and official student records were evaluated and the following information collected:

- Identification number (independent of social security number or institutional student identification number)
- Degree conferred (AA, AAS, CAS)
- Admission date (month, year)
- Graduation date (month, year)
- Biological sex (M, F or NR)
- Age (in whole years beginning with date of admission or NR)
- Race (WNH, B, H, NAT, PI, A or NR)
- Date of first MCTC course (month, year)
- Developmental education hours (in semester credit hours)
- Stop-out (Y/N)
- If Stop out = Yes; months since last attended

- Standardized examination credits (in semester credit hours)
- ACE-evaluated corporate training credits (in semester credit hours)
- ACE-evaluated military credits (in semester credit hours)
- Institutional or state evaluated training credits (in semester credit hours)
- Portfolio assessment credits (in semester credit hours)

From the 1430 graduates not applying PLA credits, a comparison group of 321 non-PLA graduates was randomly selected using the Microsoft Excel random number generator feature. Demographic and academic information was documented from these students' records in a manner consistent with the data collected from the PLA graduates.

Data Analysis

Data were entered into SPSS Version 20 and analyzed using descriptive and comparative statistics. The dependent variable for this study was net time to degree completion. This value was derived from the total number of semesters registered, beginning with the first course enrolled to graduation (time to degree), minus the total number of semesters not enrolled at MCTC (stop out time). The predictors were the types of PLA applied for MCTC credit and student demographic characteristics. The categories of PLA were the following: standardized examinations, ACE-evaluated corporate training, ACE-evaluated military credits, portfolio assessments, and institutional or state credit evaluations. Student demographics used in the study were the following: age at admission, self-reported race/ethnicity, and biological sex. Student demographics such as age, race/ethnicity, biological sex, and degree conferred were categorically coded. Data relating to number of developmental education (DE) credit hours and the number of PLA credit hours awarded were coded in a continuous scale.

In this study the predictors were coded as follows:

- Standardized examinations were coded by total number of credits awarded.

- ACE-evaluated training was coded by total number of credits awarded in each subcategory: ACE-M (military credits) or ACE-C (corporate credits).
- Portfolio assessments were coded by the total number of credits awarded in this category.
- Institutional or state certification credits were coded by the total number of credits awarded.
- Age at admission was coded in years. The value was derived from the date of birth reported on official student records at time of admission.
- Race/ethnicity was coded by self-reported race indicated at time of admission: WNH (for white non-Hispanic), minority (for Black, Hispanic, Pacific Islander, Native American or Alaskan native, and Asian) and NR (for applicants who did not indicate a specific race/ethnicity on the application).
- Biological sex was coded as M (for biological male) or F (for biological female). A code of NR was coded for those applicants who did not indicate a biological sex on the application.

Additionally, the following academic information was coded into SPSS:

- Degree conferred: AA (Associate Degree), AAS (Associate of Applied Science) and CAS (Certificate of Applied Science). Students earning more than one degree but in different graduation dates, PLA credits were coded independently for each degree. In these situations, PLA credits were counted for each graduation transcript in which a unique degree was earned.
- Developmental Education credits were coded as DE, and the total number of credits earned was recorded.
- Stop out months were derived from the last month of the last semester enrolled to the first month of the next semester re-enrolled.

Regression analysis was used to describe the relationships between the various predictors and the response variables. This type of analysis was also used to give insight into the relationships that may exist among multiple variables as well as to make predictions about outcomes from these interactions.

The research methods in this chapter were designed to illuminate the relationship between net time to degree completion with various types of prior learning assessment (PLA) and/or student demographics. The relationships between categories of PLA and student characteristics were also explored. Extant data from official student transcripts and student records were analyzed with descriptive and comparative statistical methods.

CHAPTER 4: FINDINGS

The purpose of this study was to examine the role of prior learning assessment (PLA) in postsecondary degree completion for adult students at Mountwest Community and Technical College (MCTC). The relationship between various categories of PLA and time to degree completion was evaluated through an examination of official student records at MCTC for the academic years 2006 through 2011. Quantitative analysis of the data was performed using SPSS Version 20. Relative descriptive statistical techniques were also performed where appropriate to characterize specific aspects of the population. This chapter presents the data collection process, the data and the statistical analysis of the data. The chapter is divided into the following sections: (a) population; (b) demographics; (c) major findings; and (d) chapter summary.

Population

After completion of the prospectus (Chapters 1 through 3), prospectus defense and approval by the candidate's doctoral committee, the IRB Research (Protocol) Application, Form #2 (Social/Behavioral), was submitted to and approved by the Marshall University Institutional Review Board (IRB). Data collection for the study commenced following IRB review and approval. The population for this study included all graduates from MCTC, who earned PLA credits toward graduation during the academic years 2006 through 2011. Data for the study were collected via historical assessment of college graduation records from July 2006 through May 2011. During this time frame 1769 students graduated from MCTC. Of these students 339 students used one or more categories of PLA toward degree completion and were included in the study. Personal student information, i.e. social security number and student college identification number were kept confidential during the data collection process.

Graduate records were reviewed to document the following academic and demographic information:

- Degree conferred (AA, AAS, CAS, or both CAS and an associate degree)
- Admission date (semester, year)
- Graduation Date (semester, year)
- Self-reported biological sex
- Date of birth (month, year)
- Self-reported race/Ethnicity (WNH, B, Hispanic, PI/Asian, American Indian/Alaskan Native, or none reported)
- Date of first MCTC course (semester, year)
- Credits earned through Standardized examination (in semester credit hours)
- Credits earned through ACE-evaluated corporate training (in semester credit hours)
- Credits earned through ACE-evaluated military training (in semester credit hours)
- Credits earned through institutional or state evaluated training (in semester credit hours)
- Credits earned through portfolio assessment (in semester credit hours)

From this information the following information was derived:

- Age at admission (in years)
- Number of stop out months at MCTC (where applicable)
- Time to degree completion (in months)
- Net time to degree completion (in months)

According to the National Center for Educational Statistics (NCES) (2011), MCTC is a public two-year college in Huntington, WV offering associate degree programs and certificate degrees of less than two years. The Carnegie Classification for the institution is Associate's—Public Rural-serving Medium. Student population for the academic year 2010-2011 was reported

as 3126 (total headcount undergraduate enrollment), which represents a steady increase from the 2006-2007 census data of 2363 (total headcount undergraduate enrollment).

The study included graduates for the three annual semesters from July 2006 through May 2011 who applied PLA credits toward graduation. The study group (PLA) consisted of 339 participants. A comparison group (non-PLA), based on the identical timeframe, was randomly selected using Microsoft Excel from the 1430 records of students not applying PLA credits toward their graduation. Using Excel’s random number generator function, 321 non-PLA graduates were selected as a comparison group.

Demographics

Race/Ethnicity

According to the IPEDS data from the NCES (2011) during the study’s time period, the average MCTC student population was 79.9% self-reported White non-Hispanic (WNH) and 10% self-reported minorities (Black, American Indian or Alaskan Native, Asian, Pacific Islander, or Hispanic). During this time, 11.1% of enrolled students chose not to report race/ethnicity. A summary of the descriptive statistics on race/ethnicity is found in Table 1.

Table 1
Summary Descriptive Data: Race/ethnicity

	WNH		Minority		Not reported	
	N	%	N	%	N	%
Study group (n =339)	304	89.7	14	4.1	21	6.2
Comparison group (n =321)	283	88.2	25	7.8	13	4
College-wide enrollment (n = 16945)	13539	79.9	1525	10.0	1882	11.1

Biological sex

According to the IPEDS data from the NCES (2011), during this time period biological males enrolled at MCTC consistently outnumbered biological females: an average of 56% of students self-reported as biologically male compared to an average of 44% biologically female for this time period. Within the comparison group (n = 321), 46.1% (n = 148) were male and 53.9% (n = 173) were female (Table 2).

Table 2
Summary Descriptive Data: Biological Sex

	Male		Female	
	N	%	N	%
Study group (n = 339)	208	61.4	131	38.6
Comparison group (n = 321)	148	46.1	173	53.9
College-wide enrollment (n = 19845)	9489	56.0	7456	44.0

Age at admission

According to IPEDS from NCES (2011) data during this time frame, 30% of the enrolled students at MCTC were under the age of 25, 69% were over the age of 25, and 1% chose not to report age at admission. Data from the study group (n = 339) showed that during this time 36.6% (n = 124) of the study population was under the age of 25 and 63.4% (n = 215) was over the age of 25. This was a sharp difference from the comparison group (n = 321), in which it was found that 60.4% of the population (n = 194) were under the age of 25 and 39.6% (n = 127) were over the age of 25. A summary of this descriptive data is presented in Table 3.

Table 3*Summary Descriptive Data: Age at Admission*

	Under 25		Over 25	
	N	%	N	%
Study group (n = 339)	124	36.6	215	63.4
Comparison group (n = 321)	194	60.4	127	39.6
College-wide enrollment (n = 16945)	5084	30	11692	69

Major Findings

Each of the outcome variables, (race/ethnicity, biological sex, age at admission, prior learning assessment (PLA) credits, and types of PLA credits applied) were analyzed to determine if any demonstrated a significant relationship with the dependent variable, net time to degree completion. Descriptive statistics of these variables gave an in-depth look at the relationship between these important factors. Logistical regression was used to determine the probability, if any, that each variable influenced the net time to degree completion. The results of these analyses follow.

Research Questions

Research Q 1: What relationship, if any, exists between time to degree completion and prior learning assessment (PLA) credited through portfolio assessment?

Descriptive evaluation of the data focusing on PLA credits earned through portfolio assessment showed that 7.4% (n = 25) of the study population earned PLA credits through the completion of a portfolio. Credits ranged from one credit hour to 20 credit hours, with three credit hours being the most common. Within this category of PLA, 92% (n=23) were adult students over the age of 25 when first admitted to the college (Table 4). Of those earning credits through portfolio completion, 76% (n = 19) were biologically male and 24% (n = 6) were

biologically female (Table 5). Seventy-six percent (n =19) of the participants in the PLA category (n = 25) self-reported WNH and 24% (n = 6) did not report race/ethnicity. None of the participants in this category reported a minority status (Table 6). Summaries of the descriptive statistics are found in Table 4, Table 5 and Table 6.

Table 4
Portfolio Assessments: Distribution of Age at Admission

Age at Admission	Portfolio credits		No portfolio credits	
	N	%	N	%
<18	0	0	1	0.3
18-24	2	8.0	121	38.5
25-44	17	68.0	150	47.8
>45	6	24.0	42	13.4
<25	2	8.0	122	38.9
>25	23	92.0	192	61.1
Total (n =339)	n = 25		n = 314	

Table 5
Portfolio Assessment v. Biological Sex

	Male		Female		Total
	N	%	N	%	N
Portfolio credits (n =25)	19	76	6	24	25
No portfolio credits n = 314)	189	60.2	125	39.8	314
Total (n =339)	208	61.4	131	38.6	339

Table 6
Portfolio Assessment v. Race/Ethnicity

	WNH		Minority		NR		Total
	N	%	N	%	N	%	N
Portfolio credits (n =25)	19	76	0	0	6	24	25
No portfolio credits (n = 314)	285	90.8	14	4.4	15	4.8	314
Total (n =339)	304	89.7	14	4.1	21	6.2	339

Logistic regression analysis of the relationship between net time to degree completion and the application of credits from one or more of the categories of PLA found a statistically significant relationship ($p < 0.01$, $n = 339$) (Table 7). This indicated that as the number of credits earned from PLA increased, the length of time to degree completion decreased. Because the number of participants completing portfolios for credit was below 30 ($n = 25$), an accurate correlation between net time to degree completion and PLA specifically credited through portfolio assessment was not possible. Table 7 summarizes the results of the logistic regression analysis for all outcome variables analyzed. Statistically significant variables are in bold.

Table 7
Logistic Regression of Net Time to Degree Completion and Outcome Variables

Variable	B	Sig	Exp(B)
PLA	0.007	0.009**	1.007
Standardized exam	-5.883	0.992	0.003
Institution/State *	5.169	0.00**	175.673

Note: *Institution/State = Institutional or state credit evaluation
**Significant at the $p < 0.010$ level

RQ 2: What relationship, if any, exists between time to degree completion and PLA credited through standardized examinations, e.g. DANTES Subject Standardized Test (DSST) and College Level Examination Program (CLEP)?

Logistic regression analysis demonstrated a strong relationship between net time to degree completion and application of prior learning credits toward degree completion (Table 7). Nonetheless, logistic regression analysis of the relationship between net time to degree completion and earned credits through standardized examinations did not find a statistically significant relationship ($p > 0.05$, $n = 42$) (Table 7).

Further descriptive analysis of those graduates earning PLA during this time period ($n = 339$) revealed that 12.4% ($n = 42$) earned credits through completion of standardized examinations. Of these graduates, only 33.3% ($n = 14$) were over the age of 25. The majority of the students utilizing this form of PLA were under the age of 25 (66.7%), which is unique among the categories of PLA in the study (Table 8).

Table 8
Standardized Examinations: Distribution of Age at Admission

Age at Admission	Standardized exam		No standardized exams	
	N	%	N	%
<18	0	0	1	0.3
18-24	28	66.7	95	32
25-44	11	26.2	156	52.5
>45	3	7.1	45	15.2
<25	28	66.7	96	32.3
>25	14	33.3	201	67.7
Total ($n = 339$)	($n = 42$)		($n = 297$)	

Table 9
Standardized Exams v. Self-reported Race/ethnicity

	WNH		Minority		Not reported	
	N	%	N	%	N	%
Standardized Exam (n = 42)	40	95.2	1	2.4	1	2.4
No Standardized Exam (n = 297)	264	88.9	13	4.4	20	6.7
Total (n =339)	304	89.7	14	4.1	21	6.2

Additional analysis revealed that of the graduates earning credits through standardized examinations, 95% self-reported their race/ethnicity as WNH (n = 40) and only 8.3% (n =1) self-reported a minority status. Within this group, 52.3% (n = 22) were biological males and 47.6% (n = 20) were biological females. These results are summarized in Table 10.

Table 10
Standardized Exams v. Biological Sex

	Male		Female	
	N	%	N	%
Standardized Exam (n = 42)	22	52.4	20	47.6
No Standardized exam (n = 297)	186	62.6	111	37.4
Total (n=339)	208	61.4	131	38.6

RQ 3: What relationship, if any, exists between time to degree completion and PLA credited through ACE-evaluated corporate training?

An unexpected result from this study was the finding that only two students in the five academic years spanning the study applied ACE-evaluated corporate training toward degree completion. Studies have shown that ACE-evaluated corporate training plays an essential role in degree completion for many college students (Michelson, et al., 2004). The finding that students

at MCTC rarely apply this category of PLA is important in and of itself when compared to national expectations. Due to the low number of participants in this category, accurate statistical analysis could not be performed. Further evaluation of this phenomenon should be conducted in the future to fully understand the policies and procedures within the study institution that inhibit or discourage students from taking advantage of this important PLA option.

RQ 4: What relationship, if any, exists between time to degree completion and PLA credited through ACE-evaluated military training?

Logistic regression analysis found a statistically significant relationship between net time to degree completion and credits earned through PLA (Table 7). Simple regression analysis of the relationship between net time to degree completion and application of ACE-M credits toward degree completion also revealed a statistically significant relationship (Beta = -0.137, p = .015). This indicates that as the number of credits earned through the application of ACE-M PLA credits increased, the net time it took for students to complete their academic degree decreased. Table 14 summarizes the results of the regression analysis.

Table 14
Linear Regression of Time to Degree Completion for ACE-M

	B	Std. error	Beta	Sig
ACE-M	-0.261	0.106	-0.137	0.015**

Note: **significant at the p = 0.05 level

Descriptive analysis of the study population (n = 339) found that 16.2% (n = 55) of the participants applied credits from prior military training. Within this group 83.6% (n = 46) self-reported race/ethnicity as WNH and 9.1% (n = 5) self-reported a minority status. In the comparison group, 90.8% of the participants self-reported WNH (n = 258) and 3.2% (n = 9) self-reported a minority status. Table 11 summarizes these results.

Table 11
ACE-M v. Self-reported Race/Ethnicity

	WNH		Minority		None reported		Total
	N	%	N	%	N	%	
ACE-M (n =55)	46	83.6	5	9.1	4	7.3	55
No ACE-M (n =284)	258	90.8	9	3.2	17	6	284
Total (n =339)	304	89.7	14	4.1	21	6.2	339

In regard to the distribution of the sexes within the PLA group applying military credits, 87.3% (n = 48) of the participants were biological males, and 12.7% (n = 7) were biological females. The comparison group, in contrast, contained 56.3% (n = 160) biological males and 43.7% (n = 124) biological females. Table 12 summarizes these results.

Table 12
ACE-M v. Biological Sex

	Male		Female		Total
	N	%	N	%	
ACE-M (n =55)	48	87.3	7	12.7	55
No ACE-M (n =284)	160	56.3	124	43.7	284
Total (n=339)	208	61.4	131	38.6	339

In regard to age distribution in the study group participants who applied military credits toward degree completion, data showed that 67.3% (n = 37) were over the age of 25, while among those participants in the study group not applying military credits toward graduation (n = 284), 69.8% (n = 178) of the participants were over the age of 25 (Table 13). In contrast, in the comparison group (non-PLA group) only 39.6% were over the age of 25 when first enrolled at MCTC (Table 13 and Table 3).

Table 13
ACE-M v. Distribution of Age at Admission

	ACE-M (N =55)		No ACE-M (N =284)		Total (n =339)
	N	%	N	%	N
<18	0	0	1	.3	1
18-24	18	32.7	105	37.0	123
25-44	32	58.2	135	47.5	167
>45	5	9.1	43	15.1	48
<25	18	32.7	106	37.3	124
>25	37	67.3	178	69.8	215

RQ 5: What relationship, if any, exists between time to degree completion and PLA credited through institutional or state credit evaluations?

Logistic regression analysis found a statistically significant relationship between net time to degree completion and prior learning assessment credits. An analysis of the relationship between net time to degree completion and prior learning credits earned from institutional or state credit evaluations found a statistically significantly relationship ($p = 0.000$, $n = 216$). These results indicate that as the number of credits earned through the application of institutional or state evaluated prior learning credits increased, the net time for students to complete their academic degree decreased. Table 7 summarizes the results of the logistic regression analysis.

Further descriptive analysis found that 76.9% ($n = 261$) of the study population applied institutional or state credit evaluations toward graduation, making this the largest category of PLA at the institution. Among the students utilizing institutional or state credit evaluations, 58.6% ($n = 153$) were biological males compared to 70.5% ($n = 55$) biological males among those students not applying this type of PLA toward graduation (Table 15).

Table 15*Institutional or State Evaluation Credits v. Biological Sex*

	Male		Female	
	N	%	N	%
Institutional/State credits (n = 261)	153	58.6	108	41.3
No Institutional/State credits (n = 78)	55	70.5	23	29.5
Total (n = 339)	208	61.4	131	38.6

The number of participants in this category allowed for a closer analysis of the number of PLA credits applied by the different biological sexes. This analysis revealed that in all PLA credit groupings, males outnumbered females, except for the 25 to 38 credit hour group. In this group only 20% of the participants were male, compared to 59.5-84.8% in each of the other PLA credit groups. Table 16 details the distribution of biological sexes among the different PLA credit categories.

Table 16*Detailed Institutional and State Evaluations v. Biological Sex*

Biol. Sex	No credits (N = 78)		1 to 6 (N = 42)		7 to 12 (N = 33)		13 to 24 (N = 13)		25 to 36 (N = 35)		37 to 48 (N = 86)		> 49 (N = 52)	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Male	55	70.5	25	59.5	28	84.8	9	69.2	7	20.0	43	50.0	41	78.8
Female	23	29.5	17	40.4	5	15.2	4	30.8	28	80.0	43	50.0	11	21.1
Total	78		42		33		13		35		86		52	

In addition to the disparity in biological sex among groups of credit hours awarded, there were other important observations made from the data. Noted was the finding that race/ethnicity was similar among both the study and comparison groups (89.6% v. 89.7% respectively), but age at admission was not. Among those students in the study group (PLA group) who applied institutional or state credits, 67% (n = 175) were over 25 years old. In contrast, among those

students not applying institutional or state credits but applied other types of PLA, only 51.3% (n = 40) were over the age of 25 (Table 17 and Table 18). These results are in sharp contrast to the percentage of participants over the age of 25 in the non-PLA comparison group. In this group 39.6% (n = 127) were over the age of 25 (Table 3).

Table 17
Institutional or State Evaluations v. Distribution of Age at Admission

Age at Admission	Institutional/State Credits (N =261)		No Institutional/State Credits (N = 78)	
	N	%	N	%
<18	1	0.4	0	0.0
18-24	85	32.6	38	48.7
25-44	135	51.7	32	41.0
>45	40	15.3	8	10.3
<25	86	32.9	38	48.7
>25	175	67.0	40	51.3

Table 18
Institutional or State Evaluations v. Self-reported Race/ethnicity

	WNH		Minority		Not reported	
	N	%	N	%	N	%
Institutional/state credit (n = 261)	234	89.6	9	3.4	18	6.9
No Institutional/state credits (n = 78)	70	89.7	5	6.4	3	3.8
Total (n =339)	304	89.7	14	4.1	21	6.2

A closer examination of the age of students at admission compared to the number of credits awarded from institutional or state credit evaluations revealed that each credit hour grouping had a majority of the participants over the age of 25 (Table 19).

Table 19*Institutional or State Evaluations v Credit Hours Awarded and Age at Admission*

Age at Admission	No Credits (N =78)		1 to 6 (N =42)		7 to 12 (N = 33)		13 to 24 (N = 13)		25 to 36 (N =35)		37 to 48 (N =86)		>49 (N = 52)	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%
<18 (n =1)	0	0	0	0	0	0	1	7.7	0	0	0	0	0	0
18-24 (n = 123)	38	41.7	20	47.6	9	27.3	5	38.5	11	31.4	26	31.2	14	26.9
25-44 (n =167)	32	41	16	38.1	20	60.6	6	46.1	16	45.7	48	55.8	29	55.7
>45 (n = 48)	8	10.3	6	14.3	4	12.1	1	7.7	8	22.8	12	13.9	9	17.3
<25 (n = 124)	38	41.7	20	47.6	9	27.3	6	46.1	11	31.4	26	31.2	14	26.9
>25 (n = 215)	40	51.3	22	52.4	24	72.7	7	53.8	24	68.6	60	69.7	38	73.1
Total (n =339)	78		42		33		13		35		86		52	

RQ 6: What relationship, if any, exists between PLA for college credits and the following student characteristics: age at admission, biological sex and race?

Age at admission. As discussed earlier, during this time frame, 39% of the enrolled students were under the age of 25, 60% were over the age of 25 and 1% chose not to report age at admission (NCES, 2011). Descriptive statistical analysis revealed that the mean age of students graduating with PLA credits (study group) was 30.92 years old, and the mean age of students graduating without PLA credits (comparison group) was 25.81 years old (Table 21). This finding represents a mean difference of nearly five years between these two groups. An independent sample t-test comparing the means of these two groups found a significant difference ($t(658) = 6.319, p < 0.05$) between these two groups, with the mean of the study group being significantly higher ($n = 30.92, sd = 11.154$) than the mean of the control group ($n = 25.81, sd = 9.515$) (Table 20). Nonetheless, logistic regression analysis did not find a significant relationship between net time to degree completion and student age at admission ($p > 0.05$).

These findings indicate that despite the significant difference in age between the study and comparison groups, age alone does not significantly influence degree completion.

Table 20:
Independent Sample t-test of Student Age in PLA Group v. Non- PLA Group

	t	Sig.
Age at admission	6.319	0.000**
Biological Sex	-3.970	0.000**

**significant at the $p < 0.010$ level

Table 21
Comparison of means of PLA Group v. Non-PLA Group

Age at admission		N	mean	s.d.	t
	PLA	339	30.92	11.154	6.319
	Non-PLA	321	25.81	9.515	
<hr/>					
Biological sex					
	PLA	339	1.39	0.488	-3.970
	Non-PLA	321	1.54	0.499	
<hr/>					
Race/ethnicity					
	PLA	339	1.165	0.512	-.166
	Non-PLA	321	1.159	0.464	

Note: standard deviation represented by s.d.

Data collected on student age at admission to MCTC were further divided into age categories based on criteria found in previous studies (Brighton; 2010; Klein-Collins, 2009). Using these studies as a guide, age at admission was divided into four categories: <18 years old, 18 to 24 years old, 25 to 44 years old, and >45 years old. An evaluation of the study (PLA) group revealed that 64.4% (n = 215) were 25 years old or older when they were admitted to MCTC. Among the comparison group, 39.6% (n = 127) were over the age of 25. The data showed that the age group of students completing degrees with PLA credits (study group) was the over 25

year old student group. In comparison the majority of the non-PLA group (comparison group) were under the age of 25. Table 22 summarizes these results with the majority groups represented in bold type.

Table 22
Distribution of Age at Admission: Study (PLA) v. Comparison (Non-PLA)

Age at admission	PLA (N = 339)		Non-PLA (N = 321)	
	N	%	N	%
<18	1	.3	1	.3
18-24	123	36.3	193	60.1
25-44	167	49.3	103	32.1
>45	48	14.1	24	7.5
<25	124	36.6	194	60.4
>25	215	64.4	127	39.6

Further evaluation of the age at which students were admitted into the college by dividing the number of PLA credits earned into categories consistent with national studies (Brigham, 2010; Klein-Collins, 2009) revealed useful results. Using this criterion, a clearer picture of the age of students in each credit hour grouping became evident. The data showed pockets of credit hour groups that contained a younger set of students, i.e. 1 to 6 credit hours and 13 to 24 credit hours. Table 23 summarizes these results with the majority groups in bold type within the over 25 year old group and the under 25 year old group to indicate this trend.

Table 23*Distribution of Age at Admission v. Number of PLA Credits*

	No Credits (N =6)		1 to 6 (N =51)		7 to 12 (N = 42)		13 to 24 (N = 31)		25 to 36 (N =46)		37 to 48 (N =91)		>49 (N = 72)	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%
<18	0	0	0	0	0	0.0	1	3.2	0	0.0	0	0.0	0	0.0
18-24	2	33.3	26	51.0	17	40.4	16	51.6	21	45.7	25	27.5	16	22.2
25-44	2	33.3	19	37.3	20	47.6	12	38.7	17	37.0	52	57.1	45	62.5
>45	2	33.3	6	11.8	5	11.9	2	6.4	8	17.4	14	15.4	11	15.3
<25	2	33.3	26	51.0	18	42.9	17	54.8	21	45.7	25	27.4	16	22.2
>25	4	66.7	25	49.0	25	59.5	14	45.1	25	54.3	66	72.5	56	77.8
Total	6		51		42		31		46		91		72	

Biological Sex. As discussed earlier, the study group consisted of 61.4% (n = 208) biological males and 38.6% (n = 131) biological females (Table 24). None of the participants selected to keep their biological sex anonymous on their application. Contrasting these results to the comparison group revealed stark differences in the distributions of biological sexes between these two groups. An independent sample t-test of the means of the study population and comparison groups, assigning a one for biological male and a two for biological female, found a statistically significant difference between these two populations ($t = -3.970$, $p < 0.010$) (Table 21). Logistic regression analysis of the relationship between PLA and biological sex also noted a statistically significant relationship (Table 25).

Table 24
Frequency of Biological Sexes (Male=1, Female=2)

	Male		Female	
	N	%	N	%
Study Group (PLA) (n = 339)	208	61.4	131	38.6
Comparison group (Non-PLA) (n =321)	148	46.1	173	53.9
College-wide enrollment during study period (n =16945)	9489	56.0	7456	44.0

Table 25
 Logistic regression analysis of the relationship between PLA and biological sex

Variable	beta	Sig	Exp(B)
Biological sex	0.618	0.000	1.856

*significant at the p <0.01 level

Further evaluation of the data demonstrated a variation in biological sex among PLA credits when grouped in a manner consistent with prior studies (Klein-Collins, 2009; Brigham, 2010). In all the PLA groups, biological males outnumbered biological females, with the exception of the group that earned 25 to 36 credits of PLA toward graduation (Table 26).

Table 26
Frequency of Biological Sex v PLA Credits

	Male		Female		Total
	N	%	N	%	N
1-6 PLA credits	28	53.8	24	46.2	52
7-12 PLA credits	35	81.4	8	18.6	43
13-24	22	71.0	9	29.0	31
25-36	17	37.0	29	63.0	46
37-48	51	53.7	44	46.3	95
>49	58	80.6	14	19.4	72

Race/ethnicity. As discussed earlier, in the study group 89.7% (N =304) of the participants were self-reported WNH, 4.1% (N =14) self-reported as minorities and 6.2% (N =21) did not report race/ethnicity. Among the comparison group, 88.2% (N =284) were self-reported WNH, 7.8% (N =25) were self-reported minorities and 4% (N =11) did not report race/ethnicity (Table 1). The data suggest that a larger percentage of minority students and unreported race/ethnicity were enrolled in the college compared to those who persisted to graduation. This disproportionate trend was evident among both the PLA and the non-PLA groups (4.1% and 7.8% respectively). Simple linear regression analysis of the relationship between time to degree completion and self-reported race/ethnicity among those graduates with PLA credits (study group), found no significant relationship (Table 27).

Table 27
Linear Regression of Net Time to Degree Completion v. Race/ethnicity

	B	Std. error	Beta	sig
Race/Ethnicity	0.648	2.517	0.1	0.797

*significance at the $p < 0.050$ level

Summary

The findings presented by the analysis of the data reveals a complex picture of the interaction among various student characteristics and the application of prior learning assessment for degree completion. Some of these relationships strongly influenced the time to degree completion for students, whereas others did not. Chapter 5 discusses the implications of these findings and suggests future studies to enhance the knowledge of this important topic.

CHAPTER FIVE: CONCLUSIONS, IMPLICATIONS, AND RECOMMENDATIONS

Purpose of the study

The purpose of this study was to examine the role of prior learning assessment (PLA) in postsecondary degree completion for adult students at Mountwest Community and Technical College (MCTC). Through this study, the relationship between types of PLA and net time to degree completion was examined, and the student demographic characteristics that correlated with those categories of PLA were revealed. Results will be used to suggest new administrative policies and procedures to guide advisors, faculty, and staff in serving the adult student population at MCTC. This study addressed the following research questions (RQs):

RQ1: What relationship, if any, exists between time to degree completion and prior learning assessment (PLA) credited through portfolio assessment?

RQ2: What relationship, if any, exists between time to degree completion and PLA credited through standardized examinations, e.g. DANTES Subject Standardized Test (DSST) and College Level Examination Program (CLEP)?

RQ3: What relationship, if any, exists between time to degree completion and PLA credited through ACE-evaluated corporate training?

RQ4: What relationship, if any, exists between time to degree completion and PLA credited through ACE-evaluated military training?

RQ5: What relationship, if any, exists between time to degree completion and PLA credited through institutional or state credit evaluations?

RQ6: What relationship, if any, exists between PLA for college credits and the following student characteristics: age, biological sex and race?

Methods

This study used descriptive statistics and regression analysis to examine the relationship between net time to degree completion and various types of PLA used by graduates completing their degree requirements at MCTC during the study period. Selected demographic variables were analyzed to determine if a statistically significant relationship existed between or among these variables and net time to degree completion. Of the students graduating from July 2006 through May 2011, 1769 student records were evaluated. Of these students, 339 students graduated with credits from PLA posted on their official college transcript. A comparison group was constructed from the 1430 available student records that did not have PLA credits posted on the official college transcript. This comparison group was generated using Microsoft Excel's random number generator software function. Using this method, 321 non-PLA students were identified as the comparison group. Student personal identifiers, i.e. social security number and/or student identification number, were removed from all student records examined to maintain anonymity. Data obtained were analyzed using SPSS 20.0 software. Regression analysis was performed on each of the identified variables to identify statistically significant relationships at the 0.05 alpha-level.

Findings

The sample consisted of 339 participants, which represented 19.0% of MCTC graduates for this time frame. Among the study findings, 61.4% of the study population (PLA-group) was biologically male and 38.6% were biologically female. Additionally, 89.7% self-reported race/ethnicity as White non-Hispanic (WNH), 4.1% self-reported a minority status and 6.2% did not report race/ethnicity. Regarding student age at last admission, the data showed that during this time frame the mean age of students graduating with PLA credits (study population) was

30.92 years old, and 63.4% were 25 years old or older when first admitted to the college. A summary of the findings for each research question follows:

RQ1: What relationship, if any, exists between time to degree completion and prior learning assessment (PLA) credited through portfolio assessment?

Portfolio assessments are student-created artifacts that document non-formal, non-collegiate activities (Klein-Collins, 2010). Time to degree completion was the amount of time in months from admission to graduation. For net time to degree completion, the months, minus any stop out time (months not enrolled at the college) were tallied. The credit hours awarded through portfolio assessment were analyzed to determine if a statistically significant relationship existed between number of PLA credits and the dependent variable, net time to degree completion. Despite the statistically significant relationship found between the awarding of any type of PLA credits and net time to degree completion, the low number of participants completing portfolios for credit prohibited reliable analysis of the population. Therefore, an analysis of the relationship between PLA credited through portfolio assessment and time to degree completion was not possible.

Descriptive analysis revealed that 7.4% of the study population earned PLA credits through the completion of a portfolio. Credits ranged from one credit hour to 20 credit hours, with three credit hours being the most frequent (64%). Of those earning credits through portfolio completion, 76% were biologically male and 24% were biologically female, which is in contrast to studies by Pearson (2000) and others (Freers, 1994, Klein-Collins, 2010; White, 1995), who found that female students were more likely to complete portfolio assessment for PLA credit.

Of those earning credits through portfolio completion, 76% self-reported their race/ethnicity as WNH, and none of the participants reported a minority status. Studies by Pearson (2000), White (1995) and Freers (1994) also found similar results in which the

race/ethnicity for portfolio completers was WNH in a large majority of the students. Due to the small percentage of minority students in the study, valid comparisons were not possible.

The data revealed that 92% of the students applying portfolio assessment were over the age of 25 when last admitted to MCTC, and the mean age of students completing portfolios for credit was 38.6 years old when they first were admitted to the college. These data are in contrast to the other participants in the study group (those who did not apply portfolio credit), whose average age was 28.3 years old. This finding is in line with other studies (Pearson, 2000; White, 1995; and Freers, 1994), who also found that the average students completing portfolios for credit were in their mid to upper 30s.

RQ2: What relationship, if any, exists between time to degree completion and PLA credited through standardized examinations, e.g. DANTES Subject Standardized Test (DSST) and College Level Examination Program (CLEP)?

Standardized examinations are widely accepted among postsecondary institutions (Brigham & Klein-Collins, 2010). A variety of subjects is represented in which students may elect to document college-level learning. Standardized examinations are offered by nationally recognized organizations, e.g. the College Board, and include Advanced Placement (AP) examinations, College Level Examination Program (CLEP), and Defense Activity for Non Traditional Education Support (DANTES) (Klein-Collins, 2010).

In this study, 12.4% of the study population (PLA-group) earning PLA toward graduation applied credits from standardized examinations. Two-thirds of these students were under the age of 25 when last admitted to MCTC (n = 28), which is unique among the categories of PLA. Additional findings of the study revealed that 95.2% self-reported race/ethnicity as WNH and 52.4% were biologically male.

Logistic regression analysis revealed a significant relationship between net time to degree completion and the application of PLA credits but found no significant relationship between net time to degree completion and PLA credits specifically earned from standardized examinations. This finding implies that as PLA credits increase the net time to degree completion decreases, but the results were not due to credits from standardized examinations.

RQ3: What relationship, if any, exists between time to degree completion and PLA credited through ACE-evaluated corporate training?

ACE-evaluated corporate training is awarded by the American Council on Education (ACE), which publishes credit recommendations for non-college formal training that takes place in the corporate setting rather than a traditional classroom (American Council on Education, 1981, 2011). This category of PLA includes coursework applied to the student's transcript that falls within these recommendations (Klein-Collins, 2010). It was anticipated through anecdotal observation that the numbers in this category would be low, but an unexpected finding from this study was that only two students in the five years evaluated in the study applied ACE-evaluated corporate training toward degree completion. This represented 0.1% of the graduates during the study period, which was too few participants to accurately analyze.

RQ4: What relationship, if any, exists between time to degree completion and PLA credited through ACE-evaluated military training?

The foundation of PLA began following the closure of WWII as an avenue for returning veterans to apply their college-level military training toward postsecondary credit and thereby decrease time to graduation (Aslanian, 2001; Keeton, 2000; Travers, 2011; Zucker et al., 1999). ACE-evaluated military training is evaluated by the American Council on Education (ACE) which publishes credit recommendations for training that takes place in the military (American Council on Education, 2011 and 1981).

In the study population, 16.2% of the 339 participants applied ACE-evaluated military credits toward graduation. Of these students, 87.3% were male (12.7% female), 83.6% were WNH (9% minority) and the majority, 67% , were adult students over 25 years of age when they were last admitted into MCTC.

Logistic regression analysis found a statistically significant relationship between net time to degree completion and the posting of credits from PLA. Simple regression analysis of the relationship between time to degree completion and the application of PLA specifically from military credits indicated a strong relationship ($p < 0.05$). These findings demonstrate that as PLA credits increase, the net time to degree completion decreases. Furthermore, the data demonstrate that, as credits specifically from ACE-M increases, the net time to degree completion decreases.

RQ5: What relationship, if any, exists between time to degree completion and PLA credited through institutional or state credit evaluations?

Institutional and state credit evaluations are non-formal learning opportunities that are evaluated at either the state level or institutional level and are posted to the student's official transcript for college-level credit. Institutional challenge examinations are evaluations of learning based on institutional courses or program assessment. At MCTC, institutional challenge examinations are posted to official student transcripts in the same format as institutional or state credit evaluations. As a result, they are indistinguishable on official student transcripts. For the purpose of this study, these two types of PLA are combined into one group, institutional or state credit evaluation. The results of this study revealed that compared to other categories of PLA, students earned PLA credits most frequently through this category of PLA (77%).

Logistic regression analysis found a statistically significant relationship between net time to degree completion and the posting of credits from PLA. Logistic regression analysis also

revealed a statistically significant relationship between time to degree completion and the completion of PLA credits specifically from institutional or state credit evaluations.

As with ACE-M, this finding indicates that the net time to degree completion decreases as the PLA credits increase, specifically those credits from institutional or state credit evaluations.

RQ6: What relationship, if any, exists between PLA for college credits and the following student characteristics: age, biological sex and race?

Limited studies have been published on the relationship between PLA and the characteristics of students that apply these credits toward graduation. In the current study, logistic regression analysis demonstrated a strong correlation between age at last admission and net time to degree completion within the PLA study group ($p < 0.01$). Logistic regression analysis also demonstrated a strong relationship between biological sex and credits applied from PLA within the study group ($p < 0.01$). Nonetheless, there is no evidence of a statistically significant relationship between self-reported race/ethnicity and the application of PLA credits.

A comparison of the means between the PLA study group and non-PLA comparison group indicates that the mean age for PLA students was 30.92 years at last admission compared to 25.81 for the comparison group. Although both are within the classification of adult student (25 or older), an independent sample t-test demonstrates that the PLA students in the study group are significantly older ($p < 0.05$) than the non-PLA comparison group. In addition, an analysis of the percent of biological males to biological females within the study group and the comparison group found a statistically significant difference between these two groups. An independent t-test revealed a statistically significant difference at the $p < 0.01$ level ($p = .008$). Regretfully, due to the low number of participants self-reporting minority status upon admission, a reliable comparison between the means of the categories of race/ethnicity could not be performed.

Conclusions

Analysis of the data provided evidence to support the following conclusions, with appropriate implications, about each of the research questions:

RQ1: What relationship, if any, exists between time to degree completion and prior learning assessment (PLA) credited through portfolio assessment?

As noted by Fjortoff and Zgarrick (2001) and others (Fisher, 1991; Klein-Collins, 2010; Pearson, 2000; Topping, 1996) and supported by the finding in this study, PLA credits awarded through portfolio assessment are one the least utilized in postsecondary institutions. Ironically, other researchers documented that the majority of institutions offer PLA through portfolio assessment (Gaerte, D. 1992; Klein-Collins, 2010; Zucker et al., 1999), indicating that although portfolio assessments are being offered to document learning, few students take advantage of this opportunity. A number of factors have been discussed for this observation, including perceived lack of academic integrity leading to limited faculty support, lack of student support while in the portfolio process and lack of publicity (Fisher, 1991; Topping, 1996).

Second only to ACE-C credits as the least used type of PLA at MCTC, portfolio assessments were applied in only 1.4% of the graduating student population during the study period (n=1769). In the study population (PLA) only 7.4% of students applied portfolio assessment toward graduation. This low usage was surprising, given the existence of an institutional procedure outlining the application of credits through portfolio assessment at MCTC and a specific course designed to assist students in the creation of portfolios for assessment of college level prior learning (Mountwest Community and Technical College 2010-2011 Catalog, 2012).

Portfolio assessments by their nature are time consuming for both students and evaluators. Michelson et al., (2004) found that the time-intensive nature of portfolios may

represent the major barrier to an increased use of portfolio assessments. In addition, portfolio assessments are vulnerable to socioeconomic realities (Michelson et al., 2004) and unique student characteristics (Fjortoff & Zgarrick, 2001; Kamenetz, 2011; Seid, 1999). Those students who are proficient in writing and organizational skills have greater success with the portfolio writing requirements, and therefore have a marked advantage over those students who struggle in these areas. According to Kamenetz (2011), for students to get PLA credits for portfolios, they “need very strong writing skills and tenacity to get through the process” (para. 30). The data may represent a situation where students with less strength in these areas select a different PLA path given that other methods of assessment of prior learning are available at MCTC.

Additional findings indicated that 26.1% of study participants in the PLA group required developmental education (DE) course work, but only two of the portfolio completers (8%) required DE coursework. Among the non-PLA comparison group, 37.4% participants required DE courses. Although not a focus of this study, this would indicate that nearly a third of the study population would not have the required skills to successfully embark on a portfolio project. Further studies, with a larger population, are required to fully elucidate this important observation. Table 28 summarizes the distribution of DE coursework within the study group and the comparison group.

Table 28*Distribution of Developmental Education Course Work among Categories of PLA Users*

	No DE		DE		Total
	N	%	N	%	N
Portfolio	23	92.0	2	8.0	25
ACEM	42	76.4	13	23.6	55
Standardized exam	31	73.8	11	26.1	42
Institution/State	192	73.2	69	26.8	261
All PLA	251	74.0	87	26.0	339
No PLA	201	62.6	120	37.4	321

RQ2: What relationship, if any, exists between time to degree completion and PLA credited through standardized examinations, e.g. DANTES Subject Standardized Test (DSST) and College Level Examination Program (CLEP)?

In this study two-thirds of the participants applying standardized examinations toward degree completion were under the age of 25. Logistic regression analysis revealed no significant relationship between net time to degree completion and PLA credits applied from standardized examinations. The lack of a relationship was surprising, since standardized examinations have a long-standing history in PLA, and are accepted nationally in 93% of postsecondary institutions (Brigham & Klein-Collins, 2010), including MCTC.

Michelson et al., (2004) reported that standardized examinations, which for this study included AP credit, CLEP exams, DANTES, and EDGE credits, i.e. Earn Degree Graduate Early, have gained respect in postsecondary institutions due to their long tradition in these institutions. Freed (2006), Fjortoff and Zgarrick (2001) and Klein-Collins (2010) noted that this long-standing tradition may be the primary reason that a majority of institutions preferentially

use standardized examination for prior learning credits. This finding supports Brigham and Klein-Collins' (2010) findings that 90% of the respondents from the postsecondary school evaluated accept CLEP exams and 93% accept AP credits. Nonetheless, this category of PLA was not the largest category of PLA credits awarded in this study.

There could be a number of explanations for the lack of a significant relationship noted between net time to degree completion and the earning of PLA credits through standardized examinations. As evidenced by the age at admission, students at MCTC could have completed the standardized examination credits as early entry high school students, or soon after graduation from high school. This timeframe was before they entered into their second semester and were committed to a program of study. A central principle of adult learning theory states that adults are more committed to a task when they perceive a sense of value to the experience (Knowles, 1970, 1989, 1990; Knowles, et al., 1998). The data may reflect a situation in which the students do not perceive value in these standardized examinations, and therefore, do not persist to graduation with the same zeal as students who are committed.

Despite the institutional support and student success in the application of these credits toward graduation, there does not appear to be a link between the use of these credits and decreasing time to graduation in the study group. Additional analysis revealed that 23.8% of the students who applied standardized exams also were classified as stop-out students. These are students who left college for at least one year and returned at some later date to continue their education. Although the time away from college was subtracted from the time to degree completion for this study, this finding still suggests that lack of integration, as evident in lack of persistence, influenced time to degree completions. More studies related to this relationship need to be completed in order to more fully understand the relationship between time to degree completion, PLA through standardized examinations, and stop-outs characterization.

Another possible explanation for the lack of correlation between time to degree completion and standardized tests could be the influence of developmental education (DE) for these students. The data revealed that 26.1% of the students who applied PLA credit from standardized examinations also required DE courses due to low placement examinations upon application (Table 28). According to Horn and Nevill (2006) as many as 40% of community college students require DE coursework prior to college-level classes. Many of these students fail to transition beyond DE coursework, and fewer still persist to graduation (Bailey, Jeong, & Cho, 2010). Given these facts, it is not surprising that there is a renewed interest nationally in the necessity of mandatory placement examinations. Recent studies question the value of DE coursework in support of student persistence (Belfield & Crosta, 2012; Bettinger & Long, 2009; Boatman & Long, 2010; Calcagno & Long, 2008; Hughes & Scott-Clayton, 2011; Martorell & McFarlin, 2011; Scott-Clayton, 2012). Therefore, data from the current study may be representative of a significant barrier to students who may have otherwise been successful and persisted to graduation in a reduced time frame. Additional studies need to be completed to evaluate the relationship between DE, the application of PLA credits from standardized examinations and time to degree completion in order to understand this finding better.

RQ3: What relationship, if any, exists between time to degree completion and PLA credited through ACE-evaluated corporate training?

The finding that graduating students rarely applied ACE-evaluated corporate training toward degree completion is unusual among community colleges. Studies have shown that nationally ACE-evaluated corporate training plays an important role in degree completion for many students (Brigham & Klein-Collins, 2010). Brigham and Klein-Collins (2010) found that among the postsecondary institutions in their study, 49% reported that ACE evaluated corporate training was applied in one or more of their programs.

An explanation for this finding may be the strong push at MCTC to capture corporate training through the existing Workforce Institute (WFI). This institutional program was initiated in 2008 as a means to meet the needs of working professionals whose career advancement was contingent up degree completion. Continuing education, on-the-job-training opportunities, and other forms of non-formal corporate training was evaluated to determine college-level coursework equivalency. Credits captured in this fashion would not have been channeled through ACE-corporate evaluation, but rather as institutional credit evaluation. Therefore, these credits would be identified in a separate category of PLA, institution or state credit evaluations, which is addressed in Research Question 5.

RQ4: What relationship, if any, exists between time to degree completion and PLA credited through ACE-evaluated military training?

Few studies examine the specific role of prior military credits on college completion. Brigham and Klein-Collins (2010) documented that of the 88 community colleges surveyed, 82% indicate that at least one of the programs at their institution accept ACE-evaluated military credits toward degree completion. This finding is encouraging as postsecondary institutions strive to serve service men and women as they complete their military training and return home to continue their education.

The finding of a statistically significant relationship among graduates applying PLA credit from military credits and net time to degree completion is not surprising. MCTC has a strong military programs support network. Currently two full-time employees and several part-time employees support the initiative of the institution in support of military personnel completing their education at MCTC. As Tinto (1997) and others (Bean and Metzner, 1985; Metzner and Bean, 1987) noted, relationships are key to persistence for college students. Military programs, i.e. institutional programs in support of military service men and women,

with intrusive advising practices, such as those at MCTC, are more likely to have in place activities that support and encourage students during difficult times. This support would include information on PLA as an avenue for degree completion.

RQ5: What relationship, if any, exists between time to degree completion and PLA credited through institutional or state credit evaluations?

Brigham and Klein-Collins (2010) reported that 83% of the participating institutions accept institutional credit evaluations and 73% accept institutionally created challenge exams. In the study population, this observation holds true, because, as evident in the study, MCTC has a large group of students applying credits from this category (77%).

This finding is not surprising, for MCTC has made a concerted effort to take full advantage of the state's credit conversion policy by promoting this option to corporate partners and interested students. The West Virginia Community and Technical College System established procedural rule on credit conversion is through Title 135, Series 3 (WV Community and Technical College System, 2012). In this procedural rule, guidelines for state community colleges to convert non-credit training to college-level credit are outlined. Toward this goal, the Mountwest Workforce Institute (WFI) was created to take advantage of this opportunity and assist potential students in their quest for degree completion.

Although this program has successfully brought students into the college and assisted with degree completion, more studies into the type of industry, institutional or state credit evaluations that are most common among various demographic groups of graduates should be undertaken. For example, what programs fall within the category of PLA that has 13-24 credit hours? Why does this program(s) attract a younger group of students? Why does the PLA credit category with 25-36 credit hours have a high percentage of females compared to the other

groups? Structured answers to these questions would assist in fine-tuning the WFI to better meet the needs of our community and students.

RQ6: What relationship, if any, exists between PLA for college credits and the following student characteristics: age, biological sex and race?

Due to the low number of self-reported minority students graduating during the time included in this study, detailed race/ethnicity was not able to be evaluated with clear validity in regard to the application of PLA credits. Nonetheless, both age at admission and biological sex were of sufficient number to permit a valid analysis. In this study, there was a statistically significant difference in the age at admission of students who applied PLA credits toward graduation, which demonstrated that student age at admission was statistically higher in the PLA group. The current study supports prior findings that students applying PLA toward graduation are significantly more likely to be older than those not applying PLA (Klein-Collins, 2009).

The data also found a significant difference in the biological sex of students who applied PLA credits toward graduation. Within the PLA group there was a significant increase in biological males. This finding does not support other studies, which found that there was no significant difference in the proportions of males and females between the PLA and non-PLA groups (Klein-Collins, 2009).

Because of the large number of participants in the category of PLA earning credits through institutional or state credit evaluation, additional statistical evaluation could be performed. The data demonstrated that there was a significant difference within this category of PLA in the areas of biological sex and age at admission. The PLA students that applied institutional or state credit toward graduation were both older and predominately male.

Discussion and Recommendations for Institutional Change

RQ1: What relationship, if any, exists between time to degree completion and prior learning assessment (PLA) credited through portfolio assessment?

The low number of portfolio assessments at MCTC is reflective of the national trend in postsecondary institutions (Fisher, 1991; Freers, 1994; Klein-Collins, 2010; Topping, 1996). Nonetheless, specific strategies need to be in place to identify and serve the student population that can benefit from this form of PLA. These strategies include:

- Educate credit and non-credit student advisors, counselors and faculty on the benefits of PLA and portfolio assessment specifically.
- Promote the existing institutional procedures supporting the course on portfolio construction to credit and non-credit students at orientation.
- Evaluate the compensation formula for portfolio evaluator reimbursement to make compensation more appropriate for the time taken in the evaluation of these documents.

RQ2: What relationship, if any, exists between time to degree completion and PLA credited through standardized examinations, e.g. DANTES Subject Standardized Test (DSST) and College Level Examination Program (CLEP)?

Given the possible negative influence of stop-out time and DE on persistence for younger students with credit for standardized examinations, MCTC can intervene in a number of ways to improve integration and subsequent persistence for these students. These recommendations are based on previous research that showed that students with established goals and a commitment to the institution have a reduced departure rate (Tinto (1993), and students evaluate their college experience based on individual filters of expectation of their college experience (Kuh, Gonyea &

Williams (2005). Therefore, by meeting regularly with a student counselor can aid in interventional strategies should these students begin to consider leaving the institution.

The following are two suggestions:

- Identify incoming students who have applied standardized examinations on official transcripts in order to initiate intrusive advising for this group of students and identify clear academic goals.
- Pair academic counselors with students in order to meet consistently throughout each semester in order to identify student expectations from academic experience.

RQ3: What relationship, if any, exists between time to degree completion and PLA credited through ACE-evaluated corporate training?

The finding that MCTC has few students utilizing this form of PLA, despite procedures in place that support the application of these credits, may be reflective of the need for increased education of academic advisors and councilors. Alternatively, it might be that the institution's bold initiative to proactively credential workplace learning through its WFI and apply these credits to students' transcripts early in their academic career channels students, who may have been drawn to use ACE-C credits. These students instead prefer to use WFI credits that post these institutional or state credits directly to their transcripts. Additional evaluation of students in this category is required to elucidate the true cause for this finding.

Prior to an extensive study, interventions that can be employed immediately are:

- Educate academic counselors and faculty advisors concerning PLA and ACE-evaluated corporate training.
- Discuss the availability of ACE-evaluated corporate training with new students in student orientation sessions.

- Educate non-credit counselors who advise students in non-credit programs concerning PLA and ACE-evaluated corporate training.

RQ4: What relationship, if any, exists between time to degree completion and PLA credited through ACE-evaluated military training?

MCTC is among the colleges with a strong veterans' support network and has been ranked nationally as one of the most veteran friendly two-year institutions in the country (G.I. Jobs Magazine, 2012). Nonetheless, more can be done to continue the support for the application of ACE-evaluated military training toward college completion. Toward this end specific recommendations for MCTC include:

- Maintain financial support for a Military Programs Coordinator located on site who is knowledgeable in multiple forms of PLA in order to educate incoming veterans of their options.
- Educate credit and non-credit student advisors and counselors on the availability of PLA and specifically ACE-evaluated military training.

RQ5: What relationship, if any, exists between time to degree completion and PLA credited through institutional or state credit evaluations?

As discussed, MCTC has been successful in meeting the needs of the community through the implementation of the WFI. This program sought out community businesses to provide credit evaluations and workforce training options that could be transferred into college level credit through the application of WVCTCS Title 135 Series 3 (WV Community and Technical College System, 2012), which outlines the conversion of noncredit training to college credits. Despite the success of this program, as evident from the number of graduates taking advantage of this PLA option, a greater understanding of the role of institutional and state credit evaluations

needs to be undertaken to improve services to the community. Toward this goal, the following recommendations are suggested:

- Continue funding to the WFI for personnel and services.
- Educate advisors for credit and non-credit courses into the benefits of the WFI in college completion for adult students.
- Create a structured assessment into the types of programs that are serving each of the PLA credit categories.

RQ6: What relationship, if any, exists between PLA for college credits and the following student characteristics: age, biological sex and race?

Consistent with other studies is the current study's finding that the students most likely to use PLA credits to persist to graduation are students over the age of 25 (Klein-Collins, 2010).

Not surprisingly, the specific types of PLA that are of greatest use to adult students are those that take advantage of prior experiential or workplace knowledge, i.e. portfolio, ACEM and institutional or state credits. Least useful to mature adult students are those credits that are typically utilized by rising high school students: CLEP, AP and EDGE credits. These students are typically younger than 25 years old.

With this view in mind, the following institutional activities should be considered for implementation:

- Focused marketing strategies should be developed to educate adult students on the benefits of applying prior learning to degree completion.
- Outreach to corporate partners and other workplace centers to encourage course equivalency negotiations with existing business' continuing education programs.

- Continue the strong relationship with agencies of the armed forces to develop pathways for service men and women to convert college level learning from military experience into the college.

The current study revealed a statistically significant difference between the numbers of male and female participants applying PLA credit (study group) and those not applying PLA credits (non-PLA). The data found that males are more likely to apply PLA credits toward degree completion (Table 25), which is contrary to other studies (Aarts, 1999; Stemm, 2009) in which females were more likely to complete PLA credits. Although each category of PLA had a greater percentage of biological males, the finding of a significant difference could be due to the notable increase in biological males in the portfolio category (76%) and the ACE-M category (87.3%). The present study did not note the specific programs that applied PLA most frequently, but an evaluation of the programs most frequently found in the portfolio category and the ACE-M category may shed light on the phenomenon. Perhaps the programs these students completed were those most frequently sought by males. Clearly, more study in this area is needed.

The current study did not find a statistically significant difference in race/ethnicity among the study participants. This finding is due to the regrettable observation that few minorities enroll at MCTC and fewer still persist to graduation. The low enrollment limited the available statistical techniques that would have been able to elucidate this disparity among race/ethnic groups. Although it is clear that further studies are needed into the relationship between various minorities and the types of PLA that could benefit these students, more critical is the need to increase the diversity of the student population at MCTC and assist them in persistence to degree completion. Toward this goal, recommendations from this study include:

- Embark on strategic and focused activities to increase the diversity of students enrolled at MCTC.

- Explore external grant funding to increase the diversity of students enrolled at MCTC either through scholarships or specialized programs.
- Develop robust cohort groups for students from diverse backgrounds and cultures in order to develop strong social and academic relationships that support persistence.
- Create a department within the college aimed at addressing the specific academic and social barriers of students from diverse backgrounds and cultures.

Recommendations for Further Study

Racial diversity. Although not a focus of this study, the finding that a significant number of minority students enrolled at the college do not persist to graduation is troubling. This result is not a singular event, for other research studies have noted this concern (Padilla et al., 1997). The value of a degree from a socio-economic perspective is evident. The completion of degrees has been linked to a decrease in crime, incarceration, and drug use (Gonzalez, 2011; Kotamraju & Blackman, 2011; Schmidt, 2008). In addition, completion of degrees has been linked to an increase in self-worth, increase in income potential and an overall improvement in family life (The Institute for Higher Education Policy, 1998). Additional studies into the reasons that minority students persist at lower rates, and identifying key barriers to their success, will be critical to the creation of policies and procedures that assist this population in completing their degrees. This step must be the first before additional studies into the types of PLA that best serve this group of students is undertaken.

Industry and state certification. Another area of this research that warrants further consideration is the type of industry certification evaluated and posted to the transcript as PLA for use in degree completion. This study explored institutional and state evaluation for credits as a single unit. Nonetheless, institutions award industry credit using a variety of processes. At

MCTC, industry certification can be pre-approved through structured degree programs, e.g. radiologic technology, respiratory therapy, or interior design; or approved after the training has been accomplished. In the pre-approval format, the MCTC has established a collaborative agreement with an industry partner to provide specific education and training. Graduates are eligible to transfer these educational experiences into MCTC and apply these credits toward graduation with an AAS degree upon successful completion of defined educational outcomes. The other type of industry certification involves an evaluation of industry credits after the student has completed college level work experiences not tied to a collaborative partnership. At MCTC, credit evaluation from industry certification is categorized with other forms of institutional and state credit evaluation. Further analysis of these two processes needs to be completed to determine specific areas of divergence that may lead to successful degree completion for one group but not the other.

Stop outs. Another unexpected finding, although not a focus of the study, was the number of students in the population who stopped attending college only to begin again, either at the same college or another one. In doing so, it was noted by the researcher that stop-out students fell into a number of categories:

- Students began at MCTC, stopped attending and returned to MCTC to graduate.
- Students began at another institution, stopped for a period of time, and enrolled at MCTC to graduate.
- Students attended several different institutions, which may or may not include enrollment at MCTC, with a period of at least a year between each one. Their final stop, and ultimate graduating college, was MCTC.

This picture is not a unique one. Recent studies have noted that students often travel from one college to another until graduation. The results of a national study of over 2.8 million

college students from 2006 to 2011 (National Student Clearinghouse, 2012) noted that “the linear view of college access and success that policymakers have often fails to address the realities on the ground” (p. 48). The authors continue to say that among the participants, one-third change institutions at least one time in a five year period, and part-time students are more likely to attend multiple institutions before graduation. Students may be in the military, travel for business purposes, or live in an area with multiple institutions close to home (Gonzalas, 2012). Further analysis should be conducted to more closely examine this phenomenon at MCTC and to determine the students’ views and rationale for multiple college attendance.

Developmental education. A final study necessary to fully elucidate the relationship of PLA to degree completion is the influence of DE coursework as a significant barrier to persistence. Although not a focus of this study, 26% of the students in the study required at least one DE course prior to graduation, and 37.8% of the comparison group required at least one DE course prior to graduation. A study delving into the relationship between DE course work, PLA and time to degree completion would be a timely and valuable study, given the current interest nationally in the questionable value of DE course work.

Concluding Remarks

The findings of this study support other research in the field that the application of prior learning credits decreases the overall time to degree completion for adult students. Further evaluation of the types of prior learning credits that correlate with decreased time to degree completion was not possible for all types due to the low number of participants in some categories. Nonetheless, for those categories with sufficient numbers to analyze (standardized examinations, institutional credit evaluations and military credits), there were mixed results as to their value in the completion agenda. Standardized examinations indicated no value, while institutional credits and military credits were both valuable in the completion of degrees.

Although there are limited studies in the area of PLA, scholarly research in this area is gaining interest as nationally the push toward degree completion intensifies. Fundamental to PLA is the awarding of credit for prior experiences. From this perspective learning models, such as Kolb's (1985), served two purposes to the higher education community in understanding the value of PLA to adult community college students. The first is to provide solid data upon which administrators can make rational, data-driven decisions concerning the awarding of credit for prior life experiences (Chickering, 1977; Pearson & Smith, 1985; Seamann, 2008). The second purpose, and perhaps the most significant is the connection to adult learning theory (ALT), through which value and purpose is applied to the learning experience. For adults, the awarding of college credit for learning that was gained through life experiences validates these experiences and empowers positive changes in their lives. In this manner individuals are able to reach "full potential as citizens, family members, and human beings" (Kolb, 1984, p. 4).

The outcome is that these students become valued members of society in regard to personal and societal relationships, which is important for adults. Applying this knowledge to college completion has the added benefit of serving both student and society. It has long been known that there is a strong connection between degree completion and social factors, such as decreased crime, decreased unemployment, and increased socioeconomic indicators (Gonzalez, 2011; Kotamraju & Blackman, 2011; Schmidt, 2008). Granting of credits through the application of prior college-level learning is a logical avenue for assisting in the road toward college completion and economic development.

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APPENDICES

Appendix A: Mountwest Community and Technical College approval letter

Appendix B: Institutional Review Board Approval letter

APPENDIX A

Mountwest Community and Technical College permission letter



Memorandum

To: Dr. Keith J. Cotroneo

From: Jean M. Chappell *Jean Chappell*

Date: December 12, 2011

RE: Agreement for access to student records for educational study

As discussed in the President's Council, I am requesting access to Mountwest Community and Technical College student records for the academic years 2006 through 2011 (Fall 2005 through Spring 2011) to study the role of Prior Learning Assessment (PLA) on college completion for my dissertation study.

This study is designed to explore the types of PLA that correlate to successful completion of an associate degree. The study population will include all students during this timeframe that applied PLA toward their graduation. The specific records requested for study are student transcripts and student admission and demographic information. Of course the college will have full access to the study's results and findings.

I respectfully request your authorization to procure these records.

Please let me know if you have any questions.

approved 12/13/11
[Signature]

APPENDIX B

Institutional Review Board Approval letter



Office of Research Integrity
Institutional Review Board
401 11th St., Suite 1300
Huntington, WV 25701

FWA 00002704

IRB1 #00002205
IRB2 #00003206

January 25, 2012

James Sottile, Ed.D.
Education Department

RE: IRBNet ID# 296166-1

At: Marshall University Institutional Review Board #2 (Social/Behavioral)

Dear Dr. Sottile:

Protocol Title:	[296166-1] A Study of Prior Learning Assessment in Degree Completion	
Expiration Date:	January 25, 2013	
Site Location:	MUGC	
Submission Type:	New Project	APPROVED
Review Type:	Exempt Review	

In accordance with 45CFR46.101(b)(4), the above study and informed consent were granted Exempted approval today by the Marshall University Institutional Review Board #2 (Social/Behavioral) Chair for the period of 12 months. The approval will expire January 25, 2013. A continuing review request for this study must be submitted no later than 30 days prior to the expiration date.

This study is for student Jean Chappell.

If you have any questions, please contact the Marshall University Institutional Review Board #2 (Social/Behavioral/Educational) Coordinator Michelle Woomer, B.A., M.S at (304) 696-4308 or woomer3@marshall.edu. Please include your study title and reference number in all correspondence with this office.

Jean M. Chappell, Ed.D., MT(ASCP)C
jean.chappell@mctc.edu

Academic Degrees

Educational Doctorate, Curr. and Ins.	Marshall University, Huntington, WV	Fall 2012
Master of Science, Biomedical Sciences	Marshall University, Huntington, WV	May 1988
Bachelor of Science, Zoology/Chemistry	Marshall University, Huntington, WV	Aug 1983

Professional Experience

Dean, Allied Health and Life Sciences	MCTC, Huntington, WV	2007 –present
Associate Dean, Allied Health	MCTC, Huntington, WV	2006-2007
Assistant Professor, CLS	Marshall University, Huntington, WV	2000-2006
Adjunct Faculty Positions	UC, ACC, WVSU	1998-2006
Biomedical Engineering Technician	VAMC, Huntington, WV	1998 - 2000
MT/MLT	VAMC, Huntington, WV	1995-1998

Publications

- Chappell, J. (2012, December). A study of prior learning assessment in college completion (Dissertation. Marshall University, Huntington, WV.
- Chappell, J. (Fall, 2011). Mountwest success in a time of change. *Mountwest Community and Technical College Career Focus*.
- Chappell, J. (2010, May 7). Sim-suite an effective, safe way to build medical skills. *Huntington Herald Dispatch*.
- Chappell, J. (2009, June). From Russia with Love: Lessons learned from the People to People ASCLS Delegation to Russia. *ASCLS Today*, 23(6), p. 7.
- Chappell, J. (2007, September, 26) Clinical Workers Ensure Quality. *Huntington Herald Dispatch*.
- Chappell, J. (2007, October, 3). Health information technicians are vital part of the healthcare system. *Huntington Herald Dispatch*.
- Perry, J. and **Chappell, J. M.** (2007, March). Vital Skills for Leaders. *Advance for Administrators of the Laboratory*, 16(3), p. 26.
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National and International Conference Proceedings

- Chappell, J., and Brown, S., (2012, November). Role of PLA in College Completion at Mountwest Community and Technical College. Roundtable Discussion at Commission for Adult and Experiential Learning International Conference, Washington, DC.
- Riegel, M., **Chappell, J.**, and Findley, D. (2011, October). Innovation and Entrepreneurship. Presentation at the National Association for Community College Entrepreneurship in Portland, Oregon.
- Chappell, J., Brown, S. and Cotroneo, K. (2010, April). The Lion and the Bear: Blending credit and noncredit classes to reach diverse student population. Presentation at the American Association of Community Colleges in Seattle, WA.
- Chappell, J. (2009, June). Laboratory workforce development- innovative career ladder project. Presentation at the National Laboratory Training Network annual conference in Orlando FL.
- Chappell, J. and Egnor, C. (2009, June). From Russia with love: Lessons learned from the people to people ASCLS delegation to Russia. Presentation at the National Laboratory Training Network annual conference in Orlando FL.
- Chappell, J. (2007, July). Crisis in Waiting: Analysis of WV's Clinical Laboratory Workforce. Presentation at the American Society of Clinical Laboratory Sciences annual meeting in San Diego California.
- Chappell, Jean M., James Crager, Andrew Watson, James Denvir, David Horst, Paulette Wehner, Gary Wright, and Todd L. Green (2004, November). A Study of Homocysteine Levels in a Population of West Virginia Cardiology Patients. Presentation at the Southern Medical Association Annual Meeting in New Orleans, LA.
- Flood, M., J. Chappell, et. al. (2004, October). Genetics and Homocysteine in Obese West Virginians. Poster presentation at the International meeting of the American Society for Human Genetics International meeting in Toronto.
- Chappell, J., et al.(2003, July). Correlation between MTHFR 677 (C*T), hyperhomocysteinemia and BMI. Poster presentation at the annual Meeting of the American Society of Clinical Laboratory Sciences in Philadelphia, PA.
- Chappell, J. et al. (2002, July). Frequency of MTHFR 677 Polymorphism in a West Virginia Population. Poster presentation at the IAMT/ASCLS International Meeting and World Congress in Orlando, FL.
- Chappell, J. M. and Fike, D. (2002, July). Novel Education Strategy for Clinical Electrophoresis Workshop. Poster presentation at the IAMT/ASCLS International Meeting and World Congress in Orlando, FL.

State and Regional Conference Presentations

- Chappell, J. (2011, January). Learning to Sail: The power of entrepreneurship in healthcare education. Allied Health Faculty Development Day. Presentation at Pierpont Community and Technical College in Fairmont, WV.
- Chappell, J., and Brown, S. (2011, October). PLAR and the College Completion Initiative: Help from a New Perspective. Presentation at the WVCCA/WVADA Joint Annual Meeting in Beckley, WV.

- Curry, S., Chappell, J., Fox, C., and Sovine, K. (2010, November). Infusing Entrepreneurship into Existing Programs of Study. Presentation at the WVCCA/WVADE Joint Annual Meeting in Martinsburg, WV.
- Chappell, J., Curry, S., (2010, October).. Workforce strategies in higher education. Presentation at the West Virginia Rural Health Conference in Daniels, WV.
- Chappell, J., (2010, June). Understanding Learning Styles for Lifelong Learning. Presentation at the Tristate Healthcare Conference in Huntington, WV
- Chappell, J., (2010, March). Entrepreneurship in healthcare. Teaching Presentation at the Innovation Conference in Charleston, WV.
- Chappell, J., (2009, December). Conflict resolution in healthcare. Presentation at the Tristate Healthcare Conference in Huntington, WV.
- Chappell, J., (2009, December). Diversity in healthcare. Presentation at the Tristate Healthcare Conference in Huntington, WV.
- Spivy, M., Chappell, J. and Heaton, L. (2009, May). Online Resources and Communication Tools. Presentation at the Education Technology Conference in Huntington, WV.
- Chappell, J. (2006, May 17, 19). New CLSI Standards: A new look at an old friend. Presentation at the WV Office of Laboratory Services Spring Workshop Series in South Charleston, WV.
- Chappell, J. (2005, June). Specimen Collection for Forensic Analysis. Presentation at the Tri-state Healthcare Conference in Huntington, WV.
- Chappell, J. (2004, June). Bioterrorism and the Role of the First Responders. Presentation at the Tri-state Healthcare Conference in Huntington, WV.
- Chappell, J. (2004, December). ABC's of Hepatitis. Presentation at the Tri-state Healthcare Conference in Huntington, WV.
- Chappell, J. (2004, July). LDL Homocysteinylolation and Lipid peroxidation of human endothelial cells. Invited Speaker at the Marshall University Cardiology Basic Science Lecture Series in Huntington, WV.
- Chappell, J. and Horst, D. (2001). Homocysteine and Cardiovascular Disease. 7th Annual WVSCLS/WVCLMA joint meeting. Flatwoods, WV October 2001.
- Hill, J. M. and J. W. Foster. *pncA-pncX* region of *Salmonella typhimurium*. Oral presentation. Allegheny Branch of the American Society for Microbiology. Fall Meeting 1984.
- Kinney D. M., **J. M. Hill**, M. P. Spector, and J. M. Foster. Pyridine nucleotide cycle genetics of *Salmonella typhimurium* utilizing *pnc-lacZ* fusions. Annual meeting, American Society for Microbiology, St. Louis, MO, May 1984.

Funded Grants

- Chappell, Jean M. Creation of an Occupational Therapist Assistant Program at MCTC. Grant Proposal submitted to West Virginia Community and Technical College System: Technical Program Grant. Three year \$220,000 funded July 1, 2011.
- Chappell, Jean M. Certified Occupational Therapist Assistant Program. West Virginia Community College System: House Bill 3009 Grant. One year \$40,000 grant awarded September 2010.
- Chappell, Jean M. Creating Your Own Future: Incorporating entrepreneurship in allied health. West Virginia Community College System: Technical Program Grant. One year \$22,500 grant awarded July 2009.

Chappell, Jean M. Allied Health Program Expansion Grant: Health Information Technician. West Virginia Community College System: Technical Program Grant. Three year \$139,355 Allied Health Program Expansion grant awarded July 2009.

Chappell, Jean M. Creation of a Pharmacy Technician Program at MCTC. Grant proposal submitted to West Virginia Community College Counsel System: Technical Program Grant. Three year \$219,900 grant awarded February 2009.

Chappell, Jean M. Allied Health Program Expansion: Medical Assistant. West Virginia Community College System: Technical Program Grant. Three year \$199,050 Allied Health Program Expansion grant awarded August 2008.

Chappell, Jean M. Creation of a Biotechnology Program at MCTC. West Virginia Community College Counsel System: Technical Program Grant. Three year \$220,000 program development grant awarded January 2008.

Chappell, Jean M. Biotechnology Outreach Project as part of a seamless Biotechnology curriculum. Verizon Seamless Education grant. One year grant \$62,000 awarded December 2007.

Chappell, Jean M., Creation of new Clinical Assistant/Point of Care Technician Program. Grant proposal submitted to West Virginia Community College Counsel System: Technical Program Grant. Three year \$220,000 program development grant awarded July 2007.

Chappell, Jean M. American Heart Association Summer Student Fellowship. Three month \$2000 grant awarded June 2002.

Chappell, Jean M. Novel Education Strategy for Clinical Electrophoresis Workshop. Huntington Clinical Foundation. One year \$5000 grant awarded October 2001.

Service Related Activities

Cabell County Drop-out Prevention Leadership Committee

Cabell County High School Restructuring Committee

Cabell Midland High School Academy Advisory Board

Green Acres Industries, Advisory Board

Goodwill Industries, Advisory Board

BioWV (Charter member and Board of Directors)

WV Entrepreneurship Consortium

WV Homeland Security Opportunities Consortium

Master's Thesis Committee: Kaddora, I (2010, May). Antibiotic sensitivity patterns of hospital acquired and community-acquired methicillin resistant *Staphylococcus aureus*. Marshall University.

Professional Organizations and Awards

Community Commitment Award from the Heart of Appalachia Talent Search Program, 2010 and 2011

WVASCLS (Board of Directors 2001 to 2010; President 2008)

National Association for Community College Entrepreneurship

Phi Delta Kappa