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# Factors That Are Associated With Workkeys® Assessment Scores Of Inmates In Michigan Department Of Correction's Community And Employment Readiness Training Program And Michigan State Industries Program

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**FACTORS THAT ARE ASSOCIATED WITH WORKKEYS®  
ASSESSMENT SCORES OF INMATES IN MICHIGAN DEPARTMENT OF  
CORRECTION'S COMMUNITY AND EMPLOYMENT READINESS TRAINING  
PROGRAM AND MICHIGAN STATE INDUSTRIES PROGRAM**

by

**PAMELA S. JACKSON**

**DISSERTATION**

Submitted to the Graduate School

of Wayne State University,

Detroit, Michigan

in partial fulfillment of the requirements

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2013

MAJOR: EDUCATIONAL LEADERSHIP  
AND POLICY STUDIES

Approved by:

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Advisor

Date

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**2013**

## **DEDICATION**

To my parents, Marilyn and Jim, you gave me the tools to succeed and persevere beyond any boundaries set by society.

To my children, Melissa and Christopher; only you two know the hours of studying that I have done, burning the candle at both ends and in the middle to get this far. You both have been my guiding lights in this journey and without your help correcting papers, organizing my bibliographies and files, and keeping me on track, this leg of the race would not have been completed. We did it!!!

To my sisters and brother, Linda, Sue, and Gary, thank you for your endless support.

To my friends, thank you for listening to all of the stories of frustration and delays as well as for your constant support and encouragement.

To two individuals who lost their lives to the system: Justin, one of my former students, committed suicide after his release due to the many obstacles and stresses placed on him by the system. Stevie, a family member in solitary confinement for 10 years, lost his life on death row for a crime he did not commit. The system is far from perfect and needs many improvements. This is only the beginning. Change is on the way.

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## **CHAPTER 1**

### **INTRODUCTION AND STATEMENT OF THE PROBLEM**

#### **Introduction**

Each year, more than 600,000 people in the United States are released from prison and seek to rejoin their communities (Bloom 2006). Michigan currently has over 22,000 people on parole (Michigan Department of Corrections [MDOC], 2012a). When prisoners leave the correctional facilities, they need to seek employment to support their lives. Micro-surveys and administrative data indicate that ex-offenders have relatively low employment rates and earn less than other workers with comparable demographic characteristics (Freeman, 1999; Western as cited in Freeman 2003). Freeman (2003) suggested that the criminal justice system can help offenders to obtain work skills while in prison and gain work upon release.

The MDOC used the WorkKeys<sup>®</sup> Skills assessment tests in their Community and Employment Readiness Training (CERT) program, and more recently in MDOC's Michigan State Industries (MSI) program. The CERT program is located at various MDOC facilities supporting offenders 35 and younger within seven years of their earliest release date that possess a high school diploma or General Education Diploma (GED) (Michigan Department of Corrections, 2010b). The MSI program is located at various MDOC facilities and provides meaningful work experiences for its inmates 17 years and older (Michigan Department of Corrections, n.d.d). The WorkKeys<sup>®</sup> Skills assessments determined the level of work skills that the participant possessed. Depending on what level the prisoner scored, remediation was offered to bridge the gap between what the prisoner had and what was needed for a particular job.

The purpose of this study was to determine which demographic and/or criminogenic variables are associated with the level attained on the WorkKeys<sup>®</sup> assessments by the prisoners

in Michigan's CERT and MSI programs. If a Level 3 on each of the three WorkKeys® subassessments, applied mathematics, location information, and reading for information, was not attained, the prisoner was dropped from the program. If a Level 3 or higher was attained on the three subassessments, programming, training, and education were provided to improve the score. The minimum score that the Department of Labor Economic Growth (DLEG) recommends for a workplace readiness standard is defined as skills equivalent to the 11<sup>th</sup> grade high school level of as measured by WorkKeys® Level 5 or equivalent (Michigan Department of Energy, Labor and Economic Growth, 2006a).

### **The National Career Readiness Certificate**

The National Career Readiness Certificate (NCRC), issued by American College Testing (ACT), is a portable, evidence-based credential that measures essential workplace skills and is a reliable predictor of workplace success (ACT, 2011a). NCRC uses the WorkKeys® assessments to help employers select, hire, train, develop, and retain a high-performance workforce. This credential measures: problem solving, critical thinking, reading and using written, work-related text, applying mathematical reasoning to work-related problems, setting up and performing work-related mathematical calculations, locating, synthesizing, and applying information that is presented graphically, and comparing, summarizing, and analyzing information presented in multiple related graphics (ACT, 2011a). The WorkKeys® assessment system is designed to determine workplace competencies and consists of job profiling. Computer generated assessments are given and reports are created to inform the participant how well their current skills match various job requirements (See Appendix A; ACT, 2011b). If there are any gaps between the inmates' score and what skills are needed for a particular job, instructional support gives guidance to educators on how to improve the inmates' skill level.

The WorkKeys<sup>®</sup> assessments consist of three subassessments: communication (business writing, listening, reading for information and writing), problem solving (applied technology, applied math, locating information, and observation), and interpersonal teamwork (ACT, 2011d). There are seven levels of achievement for each subassessment and certificates are awarded at the different levels. Bronze certificates are awarded if the student tests with a minimum of Level 3, silver with a minimum of Levels 4, gold certificates are awarded with a minimum of Level 5, and platinum certificates are awarded if the student scores a minimum of a Level 6 on each of the three subassessments. The National Career Readiness Certificate indicates the foundational workplace skills needed to succeed. To earn the Certificate, the Applied Mathematics, Locating Information, and Reading for Information assessments must be taken. See Table 1 below for the WorkKeys<sup>®</sup> certification levels.

Table 1

Definition of Certification Levels of WorkKeys<sup>®</sup>

<b>Certificate Level</b>	<b>Level Score Requirements</b>	<b>Percentage of Qualified Jobs in WorkKeys<sup>®</sup> Database**</b>
Platinum*	Minimum score of 6 on each of the three core areas	Examinee has necessary foundational skills for 95% of the jobs in the WorkKeys <sup>®</sup> database
Gold	Minimum score of 5 on each of the three core areas	Examinee has necessary foundational skills for 90% of the jobs in the WorkKeys <sup>®</sup> database
Silver	Minimum score of 4 on each of the three core areas	Examinee has necessary foundational skills for 65% of the jobs in the WorkKeys <sup>®</sup> database
Bronze	Minimum score of 3 on each of the core areas	Examinee has necessary foundational skills for 35% of the jobs in the WorkKeys <sup>®</sup> database

\* Platinum jobs require high levels of education, training, and experience.

\*\*The Certificate is only one of many selection criteria employers use when hiring and promoting.

Note: Note: American College Testing, 2011d

ACT researched more than 17,000 occupations and found reading, math, and locating information skills to be highly important to the majority of jobs in the workplace (ACT, 2011c).

For the purpose of this study, only the applied mathematics, locating information, and reading for information subassessments were researched. Michigan's Department Labor and Economic Growth (MDELG) approved the WorkKeys<sup>®</sup> assessments for pre/progress/post-testing adult education participants in the areas of reading for information, and writing and/or applied math because WorkKeys<sup>®</sup> is designed to determine workplace competencies (MDLEG, 2006).

WorkKeys<sup>®</sup> developed the applied mathematics assessment to test the skills in applying mathematical reasoning and problem-solving techniques in work-related problems (ACT, 2011d). Locating information is a skill WorkKeys<sup>®</sup> assesses for reading, finding, adding to, and analyzing graphics in the workplace where some of the graphics include: charts, graphs, tables, floor plans, maps, and instrument gauges (ACT, 2011d). Reading for Information is an assessment in reading and understanding work-related instructions and policies. This type of reading focuses on procedures, explanations, and narrative text. Workplace communication is not necessarily designed to be easy to read, may be poorly written, or unclear (ACT, 2011d). See Appendix B for examples of test items at the various levels of these WorkKeys<sup>®</sup> assessments. An example of an ACT WorkKeys<sup>®</sup> Summary Report can be found in Appendix C.

### **Michigan's Prison System and WorkKeys<sup>®</sup>**

The MDOC used the WorkKeys<sup>®</sup> assessments in their CERT and MSI programs to assess the gaps between inmates' current job readiness skill level and the skill needed on the job so the inmates can be trained with work skills to enhance their employment options upon release. Inmates are assisted with functional literacy, employability, and career readiness skills. Their work skills were evaluated using the WorkKeys<sup>®</sup> assessments. The WorkKeys<sup>®</sup> assessment scores were compared to the required skills needed to be successful on a particular job. College staff administers the WorkKeys<sup>®</sup> pre-test to assess if the offenders met the minimum



requirements set by MDLEG; Level 5 in reading for information, Level 4 in applied math and locating information, Level 3 in writing. If these minimum requirements were not met, inmates were given remediation in a classroom setting and/or assigned individualized computer based PLATO skill training modules. Level 3 of the WorkKeys<sup>®</sup> assessment is the bare minimum required by most employers for an entry level job where the individual has necessary foundational skills for 35% of the jobs in the WorkKeys<sup>®</sup> database (ACT, 2011c). The results from the baseline pilot study using WorkKeys<sup>®</sup> with the MSI program benefited MSI staff in identifying qualified prisoner workers which reduced training time and improved the effectiveness of dollars and staff time spent on training (MSI, n.d.b). The prisoners benefited from WorkKeys<sup>®</sup> because it built confidence knowing that their skills meet the needs of employers inside and outside of prison (MSI, n.d.b). CERT had three components to address: Component One: functional literacy which is assessed using Work Keys<sup>®</sup>; Component Two: job skills training once prisoners score high enough on WorkKeys<sup>®</sup> tests or who have completed the required remediation courses; and Component Three: life skills training which is comprised of parenting skills, conflict management and other life based skills.

### **Education in Michigan's Prisons**

In 2010, there were 42,244 men and 1,869 women in Michigan's prisons and approximately 80,500 on parole or probation, with approximately 8,800 prisoners enrolled in some academic, career, technical education, or pre-release programs, excluding the jails or juvenile facilities (MDOC, 2012b). Up until 2010, the number of incarcerations tripled during the last 25 years in Michigan, creating difficulty addressing the educational issues since most inmates arrived without a high school diploma or GED (MDOC, 2009b). Once in prison, our corrections systems fail to provide the educational programming that this population needs

(Western, Shiraldi, & Ziedenberg, 2003). There were over 10,100 inmates in Michigan's prisons completing an educational program with about 9,200 on waiting lists in 2006 (MDOC, 2007). Even though inmates may possess a GED or high school diploma, it does not guarantee that these individuals possess the skills necessary to be employable. Research indicates that inmates possessing a high school diploma should not necessarily be viewed as possessing the literacy skills needed to function in society (Haigler, Harlow, O'Connor & Campbell 1994).

With Federal grants given to MDOC, educational and work skills issues were being addressed for the younger incarcerated population by offering the opportunity to complete their GED and work toward job skills readiness. Dirkx, Kielbaso, and Corley (1999) believed that providing inmates with skills that are marketable ultimately can reduce the likelihood of their returning to prison. Providing inmates with the opportunity for education or vocational education coupled with work skills may decrease the recidivism rate and result in fewer social costs and overall fiscal costs to the prison system (Western et al., 2003).

### **Education, Employment, and Recidivism**

Martinson (1974) researched prison education and recidivism and suggested that some programs work some of the time, but researchers took his work as saying "Nothing Works". Education appeared to have a positive effect on the recidivism rate before the 1970s, until research by Martinson (1974) that claimed nothing works. Since that time, several programs and research have shown that something works.

A three-year investigation was conducted in 1987 using data from 1,205 releasees. The findings showed a strong positive relationship between education and a reduction in recidivism (Harer, 1994). This study found that the more education the released inmates had upon entering the system, the less likely the inmate was to recidivate. The highest recidivism rate was 54.6%

for individuals with some high school and the lowest rate was 5.45% for college graduates. This indicated that there was lower recidivism rates for education program participants (39%) compared to non-participants (46%; Harer, 1994). A 15-year study from 1979-1994 researched the re-incarceration rate of prisoners who had no educational programming while incarcerated (49.1%), compared to a re-incarceration rate (19.1%) of prisoners who had completed some type of educational programs (Hull, Forester, Brown, Jobe, & McCullen, 2000). Drake (2003) researched inmates working in prisons and its effects on post-prison employment patterns and recidivism. He found that regardless of the work, offenders who had a high school diploma or GED had higher employment rates than offenders who did not have an education. In a more recent study, if money was spent to have inmates attain their Adult Basic Education (ABE), General Education Degree (GED), or Career and Technical Education (CTE) certifications, the recidivism rate was reduced by 5.1%, 4.8%, and 12.6%, respectively (Washington State Institute of Public Policy, 2006).

It is difficult for offenders to return to the community and obtain employment and thus increase the likelihood to recidivate. Reported by Coley and Barton (2006), offenders return to the community with three strikes against them, making it difficult to obtain employment and less likely to succeed.

- *Strike One* – Ex-inmates with little education and low literacy levels are not desired by employers.
- *Strike Two* – Employers are looking for employees who have had steady and successful work experiences, even for low-skilled jobs. Ex-prisoners disproportionately do not have them.
- *Strike Three* – Many jobs are “off limits” to ex-prisoners. (p. 3) Jobs such as armed forces or airport security, or jobs working with vulnerable people like the elderly or children, or licensure for certain jobs may be off limits for a lifetime or set for a certain length of time until the former prisoner has shown evidence of rehabilitation (Gaynes, 2005)

Some states increased the number of occupational barriers for people with various criminal convictions where prohibitions against hiring teachers, child care workers, and related professionals were expanded (Travis, 2005). Some professions require licensing like: accountants, ambulance drivers, attorneys, barbers, contractors, nurses, physicians, pharmacists, real estate agents, and teachers. Individuals with a felony conviction may be disqualified from obtaining the license and consequently turned down for employment.

Without appropriate job skills and academic skills, employment may be difficult to get, thus leading to the possibility of recidivating. Hull et al. (2000) supported the position that completing an educational program during a period of incarceration was positively related to post-release adjustment. Linden and Perry (1982) determined that the more extensive the educational program, the more likelihood of success. According to the National Center for Education Statistics (1995), persons with lower levels of education attainment were more likely to be unemployed than those with higher levels of education. Going through some type of educational programming was found to have a positive effect on recidivism. Jenkins, Pendry and Steurer (1993) concluded that educational intervention for inmates resulted in more positive post-release functioning, including higher employment rates. They found that “the higher the level of educational attainment while incarcerated, the more likely the releasee was to have obtained employment upon release . . . The success of the college graduates is especially notable” (Jenkins, Steuer, & Pendry, 1995, p. 21).

The connection between work and crime is complicated. Research has shown a relationship between an individual’s status in the workforce and his or her likelihood of committing a crime. For example, higher levels of job instability have been shown to lead to higher arrest rates (Sampson & Laub 1993). In addition, as wages increase, crime has been

shown to decrease (Bernstein & Houston 2000; Western & Petit 2000). Research also indicates that there is a correlation between increases in money earned through legitimate means and decreases in illegal earnings (Bernstein & Houston 2000; Uggen & Thompson 2003). There may be questions as the extent to which education and training programs can help criminal offenders reintegrate into the mainstream labor market successfully (Tyler & Kling, 2004).

The WorkKeys<sup>®</sup> assessments can be used to determine what job skills the inmates have and to what level. This study investigated the relationship between the educational levels of inmates in the CERT and the MSI programs and their outcomes on the WorkKeys<sup>®</sup> assessments. Variables that were included: demographics, level of education (grade last completed), possession of a high school diploma or GED before or during incarceration, time span between getting the high school diploma or the GED and taking the WorkKeys<sup>®</sup> assessments, criminogenic factors, number of commitments, number of convictions, and types of offense. The WorkKeys<sup>®</sup> assessment test Level 3 is the bare minimum required by most employers for an entry level job (American College Testing, 2011c). Without appropriate job skills and academic skills, employment is proven to be difficult to achieve, leading to increased likelihood of recidivating (National Center for Education Statistics, 1995).

This research investigated the extent to which the identified demographic and/or criminogenic variables from the files of MDOC are associated with the level attained on the WorkKeys<sup>®</sup> assessments by the prisoners in the CERT and the MSI programs. Once identified, suggestions for remediation, intervention, or counseling were addressed to improve the test results. Education coupled with employment skills is imperative to reduce recidivism. In 2008, the North Carolina Sentencing and Policy Advisory Commission (SPAC) did a recidivism study and found that 37% of the offenders released were re-incarcerated within three years, but the

recidivism rate was lower for inmates who participated in educational or vocational programs at 35% and 32.8% respectively (Prisoner Education Legislative Continuation Review, 2010).

### **Relationship between Education, Work, and Re-entry**

The connection between work and crime is multifaceted.. According to the Prisoner Education Legislative Continuation Review (2010), inmates exiting in FY 2005-2006 completing the Adult Basic Program (ABE) earned substantially more in wages in the workforce one year after re-entry than non-participants, while those possessing the GED also outperformed the non-participants in wages one year after re-entry, and those in vocational training were equally substantive.

### **Purpose of the Study**

The purpose of this study was to determine which demographic and/or criminogenic variables were associated with the level attained on the WorkKeys<sup>®</sup> assessments by the prisoners in CERT and the MSI programs, and determined which variables have similar associations on the two groups. The ACT WorkKeys<sup>®</sup> work skills assessments emerged as the recommended and most effective assessment tool for pre-GED population (Inman &Trott, 1999). This study investigated which variables were associated with offenders scoring below a Level 3 certification, which is the minimum score that employers accept for an entry level position. The inmates in the CERT program had to possess either a high school diploma or GED, while these educational restrictions did not hold for the inmates in the MSI program. Even though the WorkKeys<sup>®</sup> assessments were created for the pre-GED population, there were inmates in the CERT and MSI programs that did not achieve Level 3 on the WorkKeys<sup>®</sup> assessments. This research determined which demographic and/or criminogenic factors were associated with inmates' achieving at least a Level 3 certification on the WorkKeys<sup>®</sup> subassessments.

No published literature was found that compared Michigan's inmates in the CERT program to the inmates in the MSI program with respect to demographic and criminogenic factors and levels attained on the ACT WorkKeys<sup>®</sup> subassessments of applied mathematics, locating information, and reading for information. To help fill the gap in the literature, this study examined three research questions pertaining to the WorkKeys<sup>®</sup> job skills assessments and the level attained in the areas of: applied mathematics, locating information, and reading for information. The State of Michigan Department of Labor and Economic Growth (MDLEG, 2006a) established a minimum of a Level 5 in reading for information, Level 4 in applied math and locating information, and Level 3 in writing. The different levels of certification include: bronze-Level 3, silver-Levels 4 and 5, gold- Levels 6 and 7, and platinum when a minimum score of Level 6 is obtained on all three subassessments (American College Testing, 2011c). Certification is awarded if at least a Level 3 is achieved, which is the minimum score required by most employers for entry level jobs (American College Testing, 2011c). Inmates present these certifications to employers as evidence verifying various job skill attainments.

Since the WorkKeys<sup>®</sup> assessment is a precursor to the GED; the research discovered what variables were associated with the various levels of achievement on the WorkKeys<sup>®</sup> subassessments in the CERT and the MSI programs. The age restriction on the CERT program is below 36 years of age, while the MSI can be 17 and older. Older inmates may not score as well on the WorkKeys<sup>®</sup> compared to younger inmates, since they have been away from formal education programs longer. This might have some bearing on the scores achieved on the WorkKeys<sup>®</sup> assessments. The research questions for the study included:

1. What is the relationship between the level of education of a prisoner and level attained on the three WorkKeys<sup>®</sup> subassessments? Does this relationship differ between prisoners in the CERT and prisoners in MSI?
2. Is there a difference between CERT and MSI prisoners having a high school diploma or GED before their first incarceration or during incarceration and level attained on the three WorkKeys<sup>®</sup> assessments?
3. Can specific demographic and criminogenic variables of a prisoner in the CERT and MSI programs be used to predict the scaled scores attained on the three WorkKeys<sup>®</sup> subassessments?

### **Significance of the Study**

Many individuals who are released back into the community are likely to be unskilled and undereducated, and as a result may become re-involved in criminal activity. Haigler, Harlow, O'Connor and Campbell (1994) suggested that unless inmates' skills were improved considerably, their prospects for being employed upon release from prison were diminished. WorkKeys<sup>®</sup> employability subassessments identify gaps in the inmates' work skills and suggest remediation (American College Testing, 2011b). The results of this study can help to determine better predictors for initial placement, remediation, and to identify and address work skills deficiencies to prepare inmates for additional training.

This study identified demographic and/or criminogenic variables that were associated with an inmates' ability to achieve a Level 3 or higher on the WorkKeys<sup>®</sup> subassessments. Once these variables were identified, more specific individualized remediation can be used to help the inmate achieve Level 3 or higher on the WorkKeys<sup>®</sup> assessments.



The state of Michigan can benefit from this study by developing programs to train prisoners for employment just prior to completing their sentences. Educators can design better curriculum and development programs to meet the deficiencies in the inmates' work skills. Furthermore, the results have educational policy implications for administrators and legislatures.

In addition, communities stand to gain economic benefits with the return of former prisoners to the workforce. Not only are these individuals working, they are also taxpayers and consumers who, by spending a portion of their income, could increase the demand for goods and services in their communities (Laub & Sampson 2001; Maruna 2001; Sampson & Laub 1993).

### **Limitations**

The following limitations relate to this study. As a result, the findings may not be generalizable to all prisoners in Michigan or in similar programs in other states.

- The study is limited to data collected by MDOC and no additional data were obtained from prisoners or former prisoners in the CERT or MSI programs.
- Only records of the incarcerated population aged 18-35 who were enrolled in CERT and those older than 18 who were enrolled in the MSI program and took the three WorkKeys<sup>®</sup> subassessments were included in this study.
- Records of CERT inmates were limited to the following correctional facilities located in Michigan: Carson City East Correctional Facility (DRF), Richard A. Handlon Correctional Facility (MTU), and the Women's Huron Valley Correctional Facility (WHV; see Appendix D for a description of each facility)
- Records of MSI inmates were limited to locations at the following correctional facilities located in Michigan: Bellamy Creek Correctional Facility (IBC), Earnest C. Brooks Correctional Facility (LRF), Carson City East Correctional Facility (DRF),

Straits Correctional Facility (KTF) consolidated with Chippewa Correctional Facility, G. Robert Cotton Correctional Facility (JCF), Gus Harrison Correctional Facility (ARF) consolidated with Parr Highway Correctional Facility (ARF), Ionia Maximum Correctional Facility (ICF), Kinross Correctional Facility (KCF), Marquette Branch Prison (MBP), Parnall (SMT), Women's Huron Valley Correctional Facility (WHV), Thumb Correctional Facility (TCF), and the Ryan Correctional Facility repurposed in October 2012 to the Detroit Reentry Center. (See Appendix E for a description of each facility.)

### **Assumptions and Conditions**

The following assumptions were applied to this study:

1. As a requirement for the CERT program, inmates had to be 35 years of age or younger, within seven years of their earliest release date, possess a high school diploma or GED, and could not have committed intentional murder crimes, criminal sexual conduct crimes, or crimes against children (such as kidnapping, child endangerment, etc.) to be eligible to complete the three WorkKeys<sup>®</sup> subassessments (MDOC, 2010c). Consequently, the applicable population for this study was limited.
2. No restrictions were placed on the inmates in the MSI program testers for the three WorkKeys<sup>®</sup> subassessments. They did not have to possess a high school diploma or GED. There were no restrictions on crimes committed.
3. Participation in the CERT and MSI program using the three WorkKeys<sup>®</sup> subassessments was voluntary, resulting in a self-selected study sample.
4. Based on information from the MDOC, the prisoner records on file are accurate.

5. Prisoners with disabilities were included in the study if they participated in the CERT or MIS programs.

### **Definition of Terms**

Adult Basic Education (ABE)	The education of adults who never began or completed the normal kindergarten-through-twelfth-grade schooling experience (Unger, 1996).
Career and Technical Education (CTE)	Once referred to as vocational education designed to provide knowledge and skills leading to initial employment and/or advanced post-secondary education upon high school completion (Michigan Department of Corrections, 2009b).
General Education Development (GED)	An alternative to the high school diploma designed to prepare participants to pass the GED tests (Language Arts Writing, Language Arts Reading, Social Studies, Science, and Mathematics) of high school equivalency (Michigan Department of Energy, Labor and Economic Growth, 2006).
Literacy	The National Literacy ACT 1991 defines literacy as an individual's ability to read, write, speak in English, compute and solve problems at levels of proficiency necessary to function on the job, and in society, to achieve one's goals, and develop one's

knowledge and potential, (Mooney & Silver-Pacuilla, 2010).

Pure Illiteracy

Purely illiterate persons cannot read or write in any capacity, for all practical purposes (Wikipedia, 2011).

Functionally Illiterate

Persons can read and possibly write simple sentences with a limited vocabulary, but cannot read or write well enough to deal with the everyday requirements of life in their own society (Wikipedia, 2011).

PLATO

A computer-based instructional system designed to support WorkKeys<sup>®</sup>, consisting of modules supporting each WorkKeys<sup>®</sup> employability skill area and level (PLATO<sup>®</sup> Learning, 2011).

National Career Readiness  
Certificate (NCRC)

A portable, evidence-based credential that measures essential workplace skills and is a reliable predictor of workplace success (American College Testing, 2011b).

KeyTrain

The complete interactive training system for career readiness skills, based on ACT's WorkKeys<sup>®</sup> assessment system and National Career Readiness Certificate (KeyTrain, 2011).

WorkKeys <sup>®</sup>	A system that consists of job profiling (finding out which skills are needed on the job), subassessments (the tests participants were taking plus several others), reporting (telling how participants skills match job requirements), and instructional support (guidance to educators related to improving participants' skill levels; American College Testing, 2011b).
Work skills	Skills that employers believe are critical to acquire and retain a job; skills such as reading, math, listening, locating information, and teamwork are considered essential. (American College Testing, 2011b).
Recidivism	Released offenders' return to prison for having committed new crimes or violations of parole within two years of release (Michigan Department of Corrections, n.d.b).

The Michigan Department of Corrections (MDOC) uses the following acronyms in this study:

CERT	Community and Employment Readiness Training
DOL	Department of Labor
MDELEG	Michigan Department of Energy, Labor and Economic Growth

MDLEG	State of Michigan Department of Labor and Economic Growth
MDOC	Michigan Department of Corrections
MSI	Michigan State Industries Program
OER	Office of Employment Readiness

## **CHAPTER 2**

### **REVIEW OF THE LITERATURE**

#### **Introduction**

This chapter gives an overview of the history of adult basic education in the United States and in Michigan's prison system. Topics researched in this literature review include: History of Adult Basic Education (ABE), comparison between the General Education Development (GED) Certificate and Michigan's current high school graduation requirements for a diploma, history of education in prison, debate over the effectiveness of prison-based education, the prison community in Michigan in more recent history, comparison of literacy levels of prison and non-prison populations, effects of prison education, education in Michigan's prisons, Michigan's Community and Employment Readiness Training (CERT) program, and Michigan State Industries (MSI) program.

#### **History of Adult Basic Education in the United States**

At the time that the first settlers arrived in the new world, the thought was that education was only for the elite (Stubblefield & Keane, 1994). In order for the new democratic society to thrive, civic leaders stressed that education needed to expand beyond the elite, and new educational programs were developed. Cooper's attempt in creating adult education resulted in a landmark in the history of American education by offering free instruction in practical knowledge and technological skills to the general public in the early 1800s and was used as a 19<sup>th</sup> century prototype for adult education and job training (Spalding, 1997). Cooper, who had a love for humanity and deep religious convictions, established the Cooper Union for the Advancement of Science and Art, which was the first postsecondary institution in the United

States to provide free education to the poor and to adults, including women (The 150 Cooper Union Years, 2009).

Denton (1994) describes the life of Booker T. Washington and the contributions he made during the adult education movement until his death in 1915. Booker T. Washington was instrumental in leading emancipated blacks out of illiteracy and economic dependence by educating the adults, this bringing about social change. Washington believed that to compete for justice, people must be trained and their training must be determined by the job market (Denton, 1994). He founded Tuskegee Institute in Alabama, pioneering national and international programs in agriculture, industry, education, health, housing, and politics (Denton, 1994). Through his work at Tuskegee, Washington established himself as an agent for social change through adult education.

Cora Wilson Stewart, a superintendent of public schools in Rowan County, Kentucky in 1911, worked to eliminate adult illiteracy, which might have been considered the official beginning of adult literacy in the United States (Cook, 1977). Due to Stewart's work with creating Moonlit Schools, the Kentucky governor established the first illiteracy commission in the United States (Cook, 1977). Bradford, the NEA president, established an NEA Committee on Illiteracy due to Stewart's speech at a 1918 NEA convention (Nelms, 1997). Stewart created instruction programs for adult literacy education, mobilized tens of thousands of volunteers as teachers and tutors for adult literacy programs, and advocated strongly for public support of educational opportunities for adult literacy learners (Nelms, 1997). Malcolm Knowles had an unprecedented career in adult education that started in the mid-1930s, published *Informal Adult Education* in 1950 that included theoretical reflections, and created the department of adult education at Boston University in the 1960s (Knowles, 1989).



During colonial times, people were satisfied doing basic labor work. Then it became apparent that education was one avenue to improve oneself (Stubblefield & Keane, 1994). With the advancement of the industrial revolution, other types of jobs emerged in the United States and more education was needed to obtain these positions. People who failed to complete primary school became laborers. The evolution of Adult Basic Education (ABE) was a direct result of the need for people to become more educated to get better jobs. Adolescents were beyond the age of primary school and needed a place or structure from which to learn reading, writing, mathematics, and job or trade skills.

Michigan's adult education had five major periods, according to Columbus (1978). The period of adult education in Michigan was begun in the Upper Peninsula during 1862-1930 by Henri A. Hobart who started evening education. Frank Cody expanded this program to Detroit in the 1930s. During the Great Depression, Charles Stewart Mott and Frank J. Manley were heavily involved with community education (Columbus, 1978). Columbus continued that the third period took place in the 1940s with the passage of the State Aid Act that reimbursed schools for students over the age of 21. Numerous additional acts were created in the 1950s and 1960s enabling people to attend adult basic education courses, complete their high school education, or obtain their GED equivalency. Columbus documented the last period in the 1970s and explained the progression of state funding for the support of adult basic education. These courses and programs included leisure subjects, as well as enrichment, basic skills review, business and vocational education, and other important educational topics to improve literacy levels and employment opportunities for citizens of the state of Michigan.

## **General Education Development (GED) Certificate**

Since 1943, more than 17.8 million high school equivalency certificates have been issued to youth and adults based on the GED test (2009 GED Testing Program Statistical Report, 2009). The GED test is recognized internationally to assess major academic skills and knowledge in core content areas that are learned during high school. When adults pass the 7.5 hour GED Test battery, the resulting GED credential certifies that they have attained the knowledge and skills associated with high school completion. The GED test battery includes the following subject areas: Language Arts (Reading and Writing), Social Studies, Science, and Mathematics (See Appendix F).

To pass the GED tests, an overall total of 2,250 or greater on the five parts of the test must be achieved by the test taker, where each individual content area test score must be 410 or greater (GED Test Details, n.d.). Those who pass receive a GED credential, certifying they are able to read, compute, interpret information, and express themselves in writing at a level meeting or exceeding that of at least 40% of graduating high school seniors.

The “general education” curriculum was developed as a reaction to the college preparatory and vocational curricular tracks in the schools. The origin of this curriculum evolved from the scientific movement of the 1910s (Quinn, 2002). Quinn wrote about a small core of progressive educators like Ralph Tyler, Benjamin Bloom, E.G. Williamson, E.F. Lindquist, and others who were aligned with the American Council on Education and committed to introducing a “general education” curriculum into the high schools and assessing school outcomes by “scientific” testing techniques. Quinn (2002) further stated that Wesley Charters hired Tyler, one of his former doctoral students, to head the Division of Accomplishment Tests at the Bureau of Educational Research at Ohio State University that led Tyler into educational evaluation. Tyler

was named University Examiner and Chairman of the Education Department at the University of Chicago due, in part, to his work on the Eight Year Project that experimented with new curricular offerings and test measurements (Quinn, 2002).

Lindquist was a test writer for Tyler's Cooperative College Study and was the author of the "general education development" (GED) test. Lindquist formerly had worked on the Iowa tests of basic skills for high school students. The GED Tests that began in 1942 were initiated by the United States Armed Forces Institute (USAFI). The original tests were administered only to returning World War II veterans who had not completed their high school studies so that they could pursue their educational, vocational, and personal goals more easily. The tests provided an opportunity to demonstrate that test takers had achieved learning outcomes typically associated with a high school diploma.

Many people were able to qualify for jobs and pursue postsecondary education upon discharge from military service (Quinn, 2002). The primary purpose of the GED test battery was for placing returning veterans in school and for determining how these men compared to the student population traditionally enrolled at each institution, and not as a high school credentialing device (Quinn, 2002). However, by 1947 the American Council on Education finally received support from the New York Education Department to issue the GED certification to high school dropouts who had not served in the military. From 1945 to 1963, the program was administered by the Veteran's Testing Service. In 1963, in recognition of the transition to a program chiefly for nonveteran adults, the name was changed to the General Educational Development Testing Service.

Over a 40-year period, the GED was modified to keep up with the educational trends. This program modification supported the adult education credentialing program for President

Lyndon Johnson's War on Poverty, as well as subsequent employment training and welfare initiatives that were developed during the 1960s and 1970s (Quinn, 2002). In the 1980s, reformers of public high schools demanded more rigorous high school course content. However, the GED credential or implications of recommendations for high school equivalency were not discussed. Furthermore, the GED test had been downgraded in 1978, requiring even lower levels of reading and math skills than the earlier test versions. In addition, the minimum age requirement was eliminated in 1981, leaving the establishment of age restrictions to each state's department of education. By 1985, five states lowered the minimum age to 16 for GED testing, 10 states used 17 years of age, and 8 more states allowed exceptions for younger persons under certain conditions (Quinn, 2002).

The American Council on Education released the latest version of the GED in 2002, which included subtests in mathematics, social studies, science, reading, and writing skills. The test uses multiple-choice items where the correct answer must be selected. Eight of the 50 math questions have the test taker supply their own answer and half of the math test may be completed by using a scientific calculator (Quinn, 2002). The GED Testing Service has guided and directed a program that now serves more than 800,000 test takers annually, with approximately 3,200 who may be confined in correctional and health institutions and U.S. civilians and foreign nationals overseas.

### **Michigan's Current High School Graduation Requirements for a Diploma**

Michigan's Merit High School Graduation Requirement made some changes for students entering 8<sup>th</sup> grade in 2006 to have a minimum of 16 credits to graduate. This change was to ensure that Michigan's high school graduates had the necessary skills to succeed either in postsecondary education or in the workplace (Michigan Department of Education, 2006).

The credit requirement increases to 18 credits effective for the class of 2016. This includes two credits in world languages if the students did not already have a similar learning experience from kindergarten through 12<sup>th</sup> grade. Sixteen mandatory credits are required that are aligned with recommended college and work-ready curriculum:

- Four credits in English language arts.
- Four credits in math, including Geometry and Algebra I and II. At least one math course must be taken during the student's senior year.
- Three credits in science, with use of labs, including biology and chemistry or physics.
- Three credits in social sciences including U.S. History & Geography, World History & Geography, .5 Civics, .5 Economics.
- One credit in Visual, Performing and Applied Arts.
- One credit in Physical Education and Health.
- All high school students must also participate in an online course or learning experience. (Michigan Department of Education, 2006)

By making these changes toward a college prep curriculum in 2006, Governor Jennifer Granholm's goal was to double the number of college graduates in Michigan so that students would be prepared to compete globally and attract new jobs and businesses in Michigan (Final Report of The Lt. Governor's Commission of Higher Education & Economic Growth, 2004). Since this new law has been in effect, the percentage of 11<sup>th</sup> graders who scored at the proficient or advanced levels in Michigan's public schools increased in the following areas:

- Writing scores improved three years in a row, from 40% in 2007, to 44% in 2010.
- Reading scores improved from 60% the previous year to 65% in 2010.
- Mathematics scores increased from 46% two years ago to 50% in 2010.

- Science scores increased from 56% the previous year to 58% in 2010.

(Michigan Department of Education, n.d.a)

The Michigan Merit Exam is given each spring to Michigan 11<sup>th</sup> grade students over a three day period. Students complete the ACT Plus Writing college entrance exam on day one, three portions of the WorkKeys<sup>®</sup> employability skills assessments on day two, and additional items in mathematics, science and social studies needed to complete the assessment to meet Michigan standards on day three (Michigan Department of Education, n.d.a). The WorkKeys<sup>®</sup> subassessments of applied mathematics, locating information, and reading for information, allow students to qualify for the WorkKeys<sup>®</sup> National Career Readiness Certificate (NCRC). Effective for the 2011-2012 school year, the Michigan State Board of Education approved new MEAP and MME cuts scores that may affect the above percentages (Michigan Department of Education, n.d.b).

### **Differences between GED and High School Diploma**

The curriculum is substantially different between obtaining a GED and high school diploma in the state of Michigan. It should be understood that the GED Tests cannot take the place of a regular high school education (Kane County Regional Office of Education, 2009). The GED tests are designed to appraise the educational development of applicants who have not completed their formal high school education. While most state legislatures increased high school graduation standards and as the politicians continue to call for high-stakes graduation testing and more challenging high school coursework, the GED's acceptance as an alternative completion test, in many states defined as the legal equivalent to the high school diploma, remains unchallenged (Quinn, 2002). However, proponents of GED testing believe that GED credential recipients have achieved the same skill levels as those who hold traditional high

school diplomas and, therefore, share equal ability to attain employment and have access to higher education (Song & Hsu, 2008). Song and Hsu compared the different employment statuses with various educational attainments. Their results are in Table 2. This table does not include any incarcerated individuals.

Table 2

*Labor Force Participation of Adults with Highest Educational Attainment of High School or Less*

Employment Status	<u>Percentage by Educational Attainment</u>			GED vs. Less than HS Diff.	t- Statistic	HS vs. GED Diff	t- Statistic
	Less than HS	GED	High School				
Employed full time	35.7 (1.4)	46.5 (2.8)	46.3 (1.3)	10.8	3.39*	-0.2	-0.06
Employed part time	9.2 (0.7)	12.8 (2.2)	10.1 (0.6)	3.6	1.56	-2.7	-1.20
Employed, but not at work	2.7 (0.4)	3.1 (1.0)	3.4 (0.5)	0.4	0.45	0.3	0.26
Unemployed	5.7 (0.5)	9.4 (1.6)	4.4 (0.5)	3.7	2.29*	-5.0	-3.00*
Out of Labor Force	46.7 (1.3)	28.2 (2.2)	35.7 (1.2)	-18.5	-7.18*	7.5	3.00*

Note: Values enclosed in parentheses represent standard errors.

\*P < 0.05, two-tailed

Using t-tests for two independent samples, Song and Hsu (2008) found statistically significant differences between GED and less than high school for people who were employed full-time, those who were unemployed, and those who were out of the labor force. A greater percentage of participants who were employed full-time had GEDs, while those who were out of the labor force were more likely to have less than a high school education. When comparisons were made between GED and high school completion, those who were unemployed were more likely to have a GED than a high school education, while those who were out of the labor force were more likely to have not completed high school.

Other researchers in the field of comparing the high school diploma and the GED have found that it also takes cognition and character to make a person successful. Heckman (2002) did extensive research in the area of early childhood investment on human capital and examined the GED as it relates to the high school diploma and human capital in the workforce. Heckman, Hsueh, and Rubinstein (2002) compared the GED recipients to high school dropouts and high school graduates in terms of wages earned, types of employment, and the effect of cognitive and non-cognitive skills on human capital and labor market outcomes. Heckman et al. (2002) used the National Longitudinal Survey of Youth (NLSY) and the Panel Study of Income Dynamics (PSID) and found that the GED test takers were: smarter than other high school dropouts who do not obtain a GED, earned hourly wages substantially less than high school graduates and earned slightly more than other high school dropouts, but no permanent effects of those obtaining their GED after 17 were detected. Heckman et al. (2002, p. 7) further stated, “The GED is a *mixed signal*: dropouts who take the GED are as “smart” as ordinary high school graduates, yet they have lower levels of non-cognitive skills than other high school dropouts”. As far as employment, the labor market values non-cognitive skills of self-discipline, persistence and perseverance, as well as the cognitive skills, but sees the GED recipients lacking in the non-cognitive skills (Heckman et al. 2002). While the GED is given as a high school equivalency, the non-cognitive skills are important for employment.

### **History of Education in Prison**

Correctional education has roots dating back to 1789 in Philadelphia’s Walnut Street Jail. Gehring, as cited by Gordon and Weldon (2003), refers to all education, from basic literacy to vocational training to a college degree, given to people within the criminal justice system (probation, city jail, county jail, state, prison, federal prison, parole). To determine how the



correctional system operates today, the history and evolution of education in the correctional system must be explored. Two main authors (Gerhing & Steurer as cited in Craer, 2003) have summarized the history of correctional education. They suggested that teaching literacy to prisoners could allow inmates to read the Bible. Eight major periods have been tracked in correctional education history, each with identifiable theme(s). Table 3 presents the major themes of the correctional education movement.

Table 3

*Major Themes of the Correctional Education Movement*

<b>1789-1875</b>	<b>1876-1900</b>	<b>1901-1929</b>	<b>1930-1941</b>
Known as the Sabbath school period, this was the time frame when correctional education became possible. Prison management systems included the Pennsylvania (or solitary confinement) and Auburn (in which inmates are told to be silent) systems.	This period is marked as Zebulon Brockway's tenure at the Elmira Reformatory. Major researchers of the period include Alexander Machonochie and Walter Crofton. It is during this period that Reformatory Movement efforts begin to transform prisons into schools.	Libraries, reformatories for women, and democracy in correctional settings are introduced during this period. Major researchers of the period include Thomas Mott Osborn and Austin McCormick.	These years are considered to be the Golden Age of Correctional Education. Highlights include McCormick's innovative programs, the rebirth of correctional/special education, and the founding of the Correctional Education Association in 1930.
<b>1946-1964</b>	<b>1965-1980</b>	<b>1981-1988</b>	<b>1989-Present</b>
This period is marked by a proliferation of social education programs; a major theme is the recovery from the interruption of WWII.	Highlights of this period include the expansion of Federal influence, the rise of post-secondary programs in correctional education settings, and the establishment of correctional school districts, special education legislation, and correctional education teacher preparation programs.	This period is marked by a conservative trend in Federal influence and many states, the rise of the Correctional Education Association's influence; and the continuation of the trends from the previous period.	Correctional educators have more access to information concerning the history of correctional education and the development of professional networks. There is also more international cooperation than before.

Steurer as cited in Craer (2003)

### **Debate over the Effectiveness of Prison-Based Education**

Since the beginning of imprisonment in the United States, the philosophy to rehabilitate or to punish has been debated over the decades. A theme from the 1900s that lasted for seven decades emphasized reform in correctional institutions, which included: implementation of indeterminate sentencing, parole, probation, and a separate juvenile justice system (Cullen & Gendreau, 2000). The Higher Education ACT of 1965 allowed prisoners to obtain a free post-secondary education. However, since the mid-1970s, there have been changes in attitudes that “nothing works.” Martinson (1974) changed the philosophy and approach to prison by reporting post-secondary education had little effect on rehabilitative efforts and no significant impact on recidivism. Ubah (2002) wanted to know if Martinson was right or wrong in his conclusion of “nothing works” on prison based education and found that it was not clearly established in the research literature. Further research by Ubah (2002) concluded that empirical studies found in the course of the literature review supported the idea that participation in prison-based education served to differentiate the more successful parolees from the unsuccessful ones.

Steurer and Smith (2003) conducted research comparing participants in correctional education programs in three states, Maryland, Minnesota, and Ohio, to assess the impact of correctional education and recidivism and post-release employment. Steuer and Smith concluded that Ohio and Minnesota showed statistically lower rates for participants than for non-participants in all three measures of recidivism, re-arrest, re-conviction, and re-incarceration while Maryland showed lower rates of recidivism between the two groups. However, this difference was not statistically significant.

Gerber and Fritsch (as cited in Holley and Brewster, 1997) refuted Martinson’s findings about prison education in a study they conducted and concluded that prison education programs

had positive outcomes. They found the programs with the most success had more extensive components, separated the inmates in the education programs from the rest of the prison population, and provided follow-up after release. Lejin (as cited in Ubah, 2005) also disagreed with Martinson's findings and stated that since education was a good indicator of the likelihood of one's success in contemporary society, improving prison education programs was essential if prison inmates were going to be provided with academic skills necessary to give them a realistic second chance at becoming constructive members in community life. Welch (as cited in Ubah, 2005) stated that correctional educational programs continued to draw support from mainstream citizens, essentially because education generally is valued in society. Educational and vocational programs help develop practical skills, and reflect the idea that any person has the right to be educated.

Empirical studies of correctional education and offender recidivism focused on whether prison-based education works or does not work, and to a great degree ignored the need for an examination of academic policy and social considerations of correctional education and offender recidivism (Anderson, 1981a; Jenkins & Steurer, 1995; Martinson, 1974; Sullivan, 1990). These studies only looked at the rate of recidivism reduction and did not take any other criterion into consideration as to what might influence recidivism. If these studies had considered academic policy and social considerations of correctional education and offender recidivism, then the debate between whether correctional education works or does not work would give more understanding, help policy makers to make critical decisions about whether programs should continue to exist, and help to determine how would they be structured and funded (Ubah, 2005). While these studies did not put much credence into prison education, other research refuted their findings.

For instance, more than 16,000 prisoners from 11 states participated in an investigation conducted by Beck and Shipley (1989). An estimated 62.5% were re-arrested for a felony or serious misdemeanor within three years. Inmates with less education had a higher re-arrest rate compared to those inmates who had more education. Offenders with an 8<sup>th</sup> grade education or less were rearrested at a rate of 61.9%; high school graduates had a re-arrest rate of 57.4%, and individuals with some college had a lower re-arrest rate of 51.9% (Beck & Shipley, 1989).

Therefore, the concept of improving education for inmates became more compelling (Petersilia; Rentscher; Warner; Jancic; Tootoonchi as cited in Ubah, 2005). Conflicting findings have divided scholars for decades in regard to the effectiveness of prison-based education. Some scholars have concluded that prison education does not work: Kettering (as cited in Ubah, 2005), Martinson (1974), and Sullivan (1990). Conversely, scholars who argue that prison education reduces recidivism include: Anderson (1981b); Anderson et al. (1991); Jenkins et al. (1995); Schumacker et al. (1990).

Martinson (1974) narrowed his research to 231 studies due to various complications of the other studies, i.e., they presented insufficient data, they were only preliminary, they presented only a summary of findings and did not allow a reader to evaluate those findings, their results were confounded by extraneous factors, they used unreliable measures, one could not understand their descriptions of the treatment in question, they drew conclusions not supported from their data, their samples were not described or too small or provided no true comparability between treated and untreated groups, or they had used inappropriate statistical tests and did not provide enough information to compare it with Martinson's independent conclusions. In his research, Martinson (1974) included treatment studies that used various measures of offender improvement: recidivism rates, adjustment to prison life, vocational success, educational

achievement, personality and attitude change, and general adjustment to the outside community. He decided to deal only with effects of rehabilitative treatment on recidivism because the use of this specific measure made enough methodological complications to make reporting of the findings difficult. Martinson (1974) did not say nothing works, but instead stated, “What we do know is, to date, education and skill development has not reduced recidivism by rehabilitating criminals” (p. 8).

According to Ubah (2005), future studies should use more than one criterion in assessing the impact of correctional education programs on post-release success of ex-offenders as this gives less narrow insights of the impact of correctional education of offenders and recidivism. Ubah (2005) thoroughly and critically attempted to examine the issues of correctional education to articulate its considerations, stating that the literature is not conclusive about the efficacy of prison based education. Ubah (2005) had four major questions that needed to be answered about offender recidivism: (a) academic considerations, (b) policy considerations, (c) social considerations, and (d) lessons learned from the examination for the 21<sup>st</sup> century-criminology. Ubah (2005) rigorously and critically attempted to examine the issues of correctional education in order to articulate its considerations and found that the literature was not conclusive as to whether prison based education works or does not work. It appears that this debate can be expected to continue.

Some believed that obtaining post-secondary education while in prison would reduce recidivism and the PELL grant was used to offset the cost of post-secondary tuition. Holloway and Moke (1986) investigated 95 graduates of associate degree programs who were paroled during 1982-1983. Inmates who graduated from high school or college were compared to a randomly selected group of inmates who had no GED or high school education and were

released during the same time period. The findings indicated that recidivism was lower as the educational level increased (college grads recidivated at a lower rate than high school grads and both recidivated at a lower rate than non-high school grads). Gordon and Weldon (2003) examined the recidivism rates of inmates at the Huttonsville Correctional Center in West Virginia who were enrolled in educational programs during 1999-2000. Their study found that GED and vocational training programs had a positive effect on reducing recidivism. “Vocational completers had a recidivism rate of 8.75%, inmates who participated in both GED and vocational training reported a recidivism of 6.71% and non-educational participants had a recidivism rate of 26%” (Gordon and Weldon, 2003, p. 200).

During the 1993-1994 sessions, Congress eliminated PELL grants for prison-based post-secondary education programs. The reason for this elimination was that the provision of educational programs for inmates in correctional institutions was not effective in achieving perceived goals measured in terms of recidivism (Morphonios & Wilson; Tewksbury; Tewksbury et al; Tracy et al; Warner, as cited in Ubah, 2005). Furthermore, Colvin, Johnson, McKelvy, Parsons & Giddens, Sykes, and Taylor & Tewksbury (as cited in Ubah, 2005) found showed that some prison educational programs served important institutional functions, including job creation, a control mechanism, and operational maintenance.

According to researchers (Anderson, 1981b; Jenkins, Steurer, & Pendry, 1995), the connection between prison education and successful reintegration into the community is not simple; other factors must be considered. The standard of recidivism alone casts doubt on the need to continue funding of correctional education (Anderson, 1981; Martinson, 1974). Linden and Perry (1982) reviewed research studies on prison education and recidivism and found nothing conclusive between prison education and improved recidivism rates.

### **The Prison Community in Michigan: More Recent History**

According to the Michigan Department of Corrections, most prisoners do not have a high school diploma and arrive at prison with a sixth grade reading and math level (MDOC, 2012c). The 2012 U.S. Census on educational attainment indicated that approximately 87 million adults 18 years and older (about 13% of the population) were without a high school diploma (United States Census Bureau, 2013). The Report to the Legislature of 2009 summarized that 55.4% of offenders had high school diplomas and 56.0% had GEDs when entering Michigan's prison system in Fiscal Year 2008-09 (MDOC, 2009a). Comparing these two populations, there appears to be a difference between the percentage of the U.S. populations without a high school diploma (13%) and the population of prisoners without the high school diploma (44.6%). These statistics indicate that people entering Michigan's correctional facilities have little education. Approximately 6% had some college upon entering MDOC and released in 2003 (Solomon, Thompson, & Keegan, 2004), whereas the national average of the general population of the U. S. who had attained a bachelor's degree between 2004-09 was 27.5% ("Adults with College Degrees in the United States, by Counties," 2011 Michigan's prison population is increasing and the system needs to provide inmates with marketable skills in hopes of reducing recidivism (Dirkx, Kielbaso, & Corley, 1999).

### **Comparing Literacy Levels of Prison and Non-prison Populations**

The national illiteracy rate for adults in the United States is 4%, while 21% are functionally illiterate, meaning that they could not write a letter explaining an error on their credit card bill, for example (National Center for Education Statistics, 1995). According to the Criminal Justice Initiative (1997), the U.S. Department of Education also found that 19% of adult inmates are completely illiterate and 40% are functionally illiterate. An extensive

investigation of the literacy skills among inmates was conducted by the Educational Testing Service in collaboration with Westat, Inc. and funded by the National Center for Education Statistics within the U.S. Department of Education (Haigler, Harlow, O'Connor & Campbell, 1994). The purpose of the survey was to profile the English literacy of adults in the United States, including prison inmates, based on their performance across a wide array of tasks that reflected the types of materials and demands encountered in their daily lives.

A total of 1,150 randomly selected inmates in 80 randomly selected federal and state prisons were interviewed for their literacy skills. Their answers and results were compared with 13,600 randomly selected adults over the age of 16 who lived in households across the country. Each participant spent approximately one hour responding to a set of literacy tasks, as well as answering questions about demographic characteristics, educational background, reading practices, and other literacy-related areas. Literacy skills have been divided into four levels, with most people literate at Level 3 or higher. Table 4 presents the four literacy levels and examples of information that can be understood at each level.



Table 4

*Literacy Levels*

Reading Level and Definition		Key Abilities Associated with Level
1. <i>Below basic</i> indicates no more than the most simple and concrete literacy skills		<ul style="list-style-type: none"> <li>• Locating easily identifiable information in short, commonplace prose texts</li> <li>• Locating easily identifiable information and following written instructions in simple documents (e.g., charts or forms)</li> </ul>
Score ranges for below basic:		
Prose	0 – 209	
Document	0 – 204	
Quantitative	0 – 234	<ul style="list-style-type: none"> <li>• Locating numbers and using them to perform simple quantitative operations (primarily addition) when the mathematical information is very concrete and familiar.</li> </ul>
2. <i>Basic</i> indicates skills necessary to perform simple and everyday literacy activities.		<ul style="list-style-type: none"> <li>• Reading and understanding information in short, commonplace prose texts</li> <li>• Reading and understanding information in simple documents</li> </ul>
Score ranges for basic:		
Prose	210 – 264	
Documents	205 – 249	
Quantitative	235 – 289	<ul style="list-style-type: none"> <li>• Locating easily identifiable quantitative information and using it to solve simple, one-step problems when the arithmetic operation is specified or easily inferred</li> </ul>
3. <i>Intermediate</i> indicates skills necessary to perform moderately challenging literacy activities		<ul style="list-style-type: none"> <li>• Reading and understanding moderately dense, less commonplace prose texts as well as summarizing, making simple inferences, determining cause and effect, and recognizing the author's purpose</li> <li>• Locating information in dense, complex documents and making simple inferences about the information</li> </ul>
Score ranges for intermediate:		
Prose	265 – 339	
Document	250 – 334	
Quantitative	290 – 349	<ul style="list-style-type: none"> <li>• Locating less familiar quantitative information and using it to solve problems when the arithmetic operation is not specified or easily inferred</li> </ul>
4. <i>Proficient</i> indicates skills necessary to perform more complex and challenging literacy activities		<ul style="list-style-type: none"> <li>• Reading lengthy, complex, abstract prose texts as well as synthesizing information and making complex inferences</li> <li>• Integrating, synthesizing, and analyzing multiple pieces of information located in complex documents</li> </ul>
Score ranges for proficient:		
Prose	340 – 500	
Document	335 – 500	
Quantitative	350 – 500	<ul style="list-style-type: none"> <li>• Locating more abstract quantitative information and using it to solve multi-step problems when the arithmetic operations are not easily inferred and the problems are more complex</li> </ul>

Note: U. S. Department of Education, National Center for Education Statistics, Health Literacy of America's Adults, 2003 [http://nces.ed.gov/pubs2006/2006483\\_1.pdf](http://nces.ed.gov/pubs2006/2006483_1.pdf)

Proficiency scores were reported on three scales that reflect varying degrees of skill in prose, document, and quantitative literacy. Results indicated that the average proficiencies of the prison population were 246 on the prose scale, 240 on the document scale, and 236 on the quantitative scale are lower than those of the household population, which were 273 on the prose

scale, 267 on the document scale, and 271 on the quantitative scale (Haigler et al., 1994). Approximately 70% of the prisoners performed in Levels 1 and 2. In terms of the four literacy levels, the proportion of prisoners in Level 1 on each scale (31 to 40%) is larger than that of adults in the total population (21 to 23%). Conversely, the percentage of prisoners who demonstrated skills in Levels 4 and 5 (4 to 7%) is smaller than the proportion of adults in the total population who performed in those levels (18 to 21%) on the prose, document, and quantitative scales (Kirsch, Jungeblut, Jenkins, & Kolstad, 2002). Prisoners were more likely to experience difficulty in performing tasks that require them to integrate or synthesize information from complex or lengthy texts or to perform quantitative tasks that involve two or more sequential operations and that require the individual to set up the problem.

Nearly 51% of the prisoners completed high school or its equivalent, compared to 76% of the non-prison population (National Center for Education Statistics, 1995). Prisoners who did not receive a high school diploma or GED demonstrated lower levels of proficiency than those householders (non-prison participants) who completed high school, earned a GED, or received some post-secondary education. Although inmates who received a GED demonstrated about the same proficiencies as householders with a GED, inmates with a high school diploma demonstrated lower proficiencies than householders with a high school diploma. Haigler, Harlow, O'Connor and Campbell (1992) concluded that inmates possessing high school diplomas should not necessarily be viewed as possessing the literacy skills needed to function in society, given that their performance was lower than that of householders with high school diplomas.

According to the 2010 Report to the Legislation (MDOC, 2010a) correctional educators instruct a unique and difficult population where prisoners enter correctional education with:

- Low grade level test scores – below literacy
- Repeated public school failures
- A need for significant amounts of basic instruction before they can begin GED preparation
- Mental and physical health needs that create barriers to learning
- Previous negative education experiences along with poor attitudes toward learning
- Lack of study habits, work ethic, or knowledge of testing strategies, all of which must be taught in addition to core curricula
- History of polysubstance abuse, which is known to result in memory loss and learning difficulties
- Previous special education history, which indicates a potential impediment to the learning process
- Custody, security, and other administrative priorities which impact the ability to educate
- Short prison sentences, which present challenges to advance prisoners multiple grade levels in a time frame measured in months
- Learning disabilities (30%-50% compared to 5%-15% in general adult education)
- Illiteracy or functional levels several years below grade level
- History of school failures (40% without GED or HSD, compared to 18% of all adults). (p. 7)

Correctional education programs help inmates to break the cycle of poor literacy skills and criminal activity by providing them with the knowledge and skills necessary to succeed both in the workplace and in society. Effective correctional education programs help inmates to develop problem-solving and decision making skills that they can use within the prison industry and in employment after their release (Steurer, as cited in Hendricks, Hendricks, & Kaufmann, 2001). Mace (1978) examined parole and intake records of 320 adult male inmates discharged in 1973 from West Virginia correctional institutions. At the end of four years there were 76

recidivists; 55 were from the group that did not participate in educational programs and only seven of those completing the GED and only four of the college-level participants were re-incarcerated. Steurer suggests that while a direct correlation between the disadvantaged and crime has not been verified, descriptions of prison populations suggest that poor literacy skills and crime are related.

### **Effects of Prison Education**

There have been many studies that have shown that prison education has had a positive effect on recidivism and employment. Harer's (1994) 3-year investigation, which examined 1205 released prisoners, showed a positive relationship between education and lower levels of recidivism. This study found that the more education the released inmate had upon entering the system, the less likely the inmate was to recidivate. Harer found that the highest recidivism rate was 54.6% for individuals with some high school and the lowest rate was 5.45% for college graduates. Recidivism rates also decreased according to how much education an inmate received during incarceration. The ultimate goal of correctional education is to reduce recidivism to help inmates become self-sufficient so that they can be re-integrated into society and become productive and successful workers, citizens, and family members (Cortley as cited in Hendricks et al., 2001).

An 18-month study by Jenkins, Pendry, and Steurer (1993) used four subgroups (ABE, GED, vocational education, and post-secondary students) to investigate recidivism rates for the various educational levels. The study concluded that there was a positive and significant benefit of education for students at all levels when compared to similar inmates who did not receive any educational program while incarcerated. The inmates in the postsecondary educational group contained no recidivists, further supporting the conjecture that recidivism was significantly

related to educational level. Tables 5 and 6 present the numbers of prisoners in the two educational programs and the recidivism rates for these programs.

Table 5

*Recidivism Rate for Inmates by Education Type*

Inmates at Huttonsville Correctional Center	Vocational Education	GED
Total Enrollment	300	50
Total still housed from HCC	131	26
Total released from HCC	169	24
Total transferred to other institutions	49	12
Total paroled	64	7
Total deaths	1	0
Total court ordered released	2	2
Total discharged	53	13
Total parole violators	11	2
Recidivism Rate	8.75%	6.71%

Source: West Virginia Department of Corrections — Tracking Prime Time/Inmate System, 1999-2000 (as cited in Gordon & Weldon, 2003)

Table 6

*Total Recidivism Rate for Nonparticipating Inmates at Huntsville Correction Center*

Disposition of Inmates	Number
Released	289
Completed vocational training	193
Did not participate in vocational training	96
Had Parole revoked:	88
a. Attended vocational training	12
b. Did not attend vocational training	76
Recidivism Rate	26%

Source: West Virginia Department of Corrections Prime Time/Inmates Tracking System, 1999-2000 (as cited in Gordon & Weldon, 2003)

Table 5 shows a recidivism rate of 8.75% and 6.71% for those inmates who participated in vocational education and the GED programs respectively at Huntsville Correctional Center. Table 6 shows a recidivism rate of 26% of those inmates who did not participate in some educational programming at the Huntsville Correctional Center. Research by Jenkins, Pendry, and Steurer (1993), shows that education has an effect on the recidivism rate.

Taylor and McAtee (2003) documented a program called “Turning a New Page” in New Brunswick, Canada for non-readers in prison. This program began in June 2000 to determine if there was a correlation between self-esteem, behavior, and lack of literacy skills. When the study was initiated, inmates hid their books in an effort to make sure that no one would know they were learning how to read. As the prisoners increased their literacy skills throughout the program, they carried their books with pride. Taylor and McAtee (2003) found that there was a correlation between self-esteem, behavior, and the lack of literacy skills in the New Brunswick Turning a New Page program. These older incarcerated non-readers needed to be motivated in

order for the intervention to work (Allen; Blasewitz & Taylor; Hasselbring, Goin, Bottge, Taylor, & Daley; Taylor et al. as cited in Taylor & McAtee, 2003). The motivation for the Turning a New Page program was to have the inmates record their book for young children. Taylor and McAtee (2003) found that while the task took many trials to complete a book, the inmates gained validation and self-worth. The prisoners in the program had to read to develop fluency not only in the works but also in the inflection of the sentences to make the story more interesting for children.

From June 2000 to June 2001, more than 1,600 children and 56 teachers in 20 elementary schools benefited from the “Turning a New Page” program (Taylor & McAtee, 2003). Sixty-five inmates whose reading levels were tested and measured using the Canadian Adult Achievement Test participated in the program. According to Taylor and McAtee, a pre and post-grade level test was given and prisoner reading improvement, on average, was three to four years. The elementary students benefited from the program to help them with their reading. An exit survey of the program was given to teachers to assess the success that the “Turning a New Page” program had for their students. The school districts benefited, as it was a free program. However, the benefit the inmates received from this program was self-esteem.

The 65 inmates were in the program for two years, with 42 actively participating while the other 23 read but in restricted settings due to their offenses. Of the 42 active participants in the program, only four of them returned to prison (Taylor & McAtee, 2003). According to Taylor and McAtee, the average national return rate to prison in Canada is 43%, while the “Turning a New Page” program only showed a 13% return rate. The program was nominated as the most successful program for parole and reintegration. It appears from this study that this could become an effective model for the literacy program in Michigan’s prison system.

Increased educational attainment generally is associated with increased income, even among those with relatively low cognitive skills (Tyler, Murnane & Willet, 2000). Project Life Enrichment and Development (LEAD), an educational program in Genesee County Jail (Michigan) was investigated by Williams (1996). Project LEAD used a holistic approach to identify inmates whose functional literacy levels were so low that it would have been difficult for them to secure and maintain jobs. The program integrated academics, life skills, and vocational instruction, tailoring them to meet the individual needs of the participants. Inmates received a minimum of 15 hours of instruction weekly, including a minimum of 5 hours of computer-assisted instruction and 10 hours of classroom instruction, life-skills sessions, and individual academic tutoring. The 1995 performance report showed that the recidivism rate for 611 Project LEAD participants from Sept 1993 – Sept 1995 was 3.5%.

### **The Intake Process in Michigan's Prisons**

At the initial intake of the offender into Michigan's prison system, male prisoners are brought to the Charles Egeler Reception and Guidance Center in Jackson, Michigan. Women prisoners are taken to the Women's Huron Valley Correctional Facility in Ypsilanti, Michigan. There they are photographed, fingerprinted, given their prison wardrobe, and toiletries such as toothpaste and deodorant. When offenders are first brought to the reception centers (normally by county sheriff's deputies), they are photographed, showered and fingerprinted. During reception, a check is made to find out if there are any remaining pending charges. A prisoner file is created, including the pre-sentence report and other documents that are used in classification. All convicted felons are given a physical and psychological examination to determine if there are any personality disorders that can be used to determine placement in a facility and further therapy or counseling (MDOC, n.d.b). The reception process in Michigan's prisons takes about



10 days, but prisoners may stay in reception units three to five weeks longer while they wait for their specific cell assignment.

All prisoners are given a TB test and a physical, including a blood test for HIV and venereal disease; dental and eye exams also are scheduled. The prisoner is then taken out under a secure escort if further examination is required or a medical specialist is needed. The Minnesota Multi-phasic Personality Inventory test is given to determine any psychological or personality disorders. If a prisoner appears to be within normal limits, they continue in the processing, while those who appear to be in need of further evaluation and possible intervention are scheduled for an interview by a staff psychologist (MDOC, n.d.f). Prisoners convicted of criminal sexual misconduct and similar crimes are automatically scheduled for an interview by a psychologist who may make a recommendation for therapy or counseling.

Once all the initial testing is complete, a review is made by a classification committee of all the material collected about the prisoner, including the presentence report. This committee, which includes a custodial staff member, makes the final decision at what level (I through V) to house the prisoner based on recommendations made by a processor who has evaluated all the reports and test results (MDOC, n.d.a).

The classification of the prisoner takes the following into consideration: the potential for escape and misbehavior while in prison, an individual's past escape history from custody is examined along with behavior while in jail, enemies, if known, are kept separated throughout their incarceration while those offenders needing special protection are assigned to "protection units" within various prisons (MDOC, n.d.a). Accommodations for special needs, such as placement in a federal prison for those offenders who would be difficult to protect in the Michigan system, or locating a prison with programming that can meet the prisoner's special

needs such as substance abuse, sex offender counseling, basic education or vocational training are made (MDOC, n.d.a).

### **Education in Michigan's Prisons**

Education testing is also conducted during the reception process. The TABE (Test of Adult Basic Education [ABE]) is administered to measure the prisoner's achievements in individual reading and math skills and to determine placement and progress in ABE/GED classes. Prisoners must provide verifiable documentation as to whether they possess a high school diploma or GED certification. If the prisoner does not have a high school diploma or GED certificate, the prisoner must enroll in Prisoner Education as soon as possible after arrival. Prisoners who refuse to attend Adult Basic Education (ABE) or GED classes may be subject to sanction, room restriction, indigent pay forfeiture, loss of "good" time, and/or negative parole consideration (MDOC, n.d.e). Prisoners who have a high school diploma or GED certification are given a vocational aptitude test to choose a vocational trade program offered through Career and Technical Education (CTE). This process normally takes about 10 days, but prisoners frequently remain in reception units three to five weeks longer while they wait for a cell in the particular prison to which they have been assigned (MDOC, n.d.e).

Michigan Department of Corrections Education Action Plan 2010-2013 mission statement reads: "The mission of the MDOC Prisoner Education system is to facilitate the transition from prison to the community by assisting prisoners in the development of their academic, workplace, and social competencies through effective and cost-efficient programs" (Michigan Department of Corrections, 2009b). To achieve this mission statement, Michigan's focus of prisoner education is to prepare prisoners for successful reentry into the community, while addressing prisoner needs (barriers), aptitudes, and interests. All education programs

incorporate workplace, communication, and social skills training (MDOC, 2009b). The purpose of education is to increase the functional level of prisoners and prepare them with competencies that can increase their chances for success upon release (MDOC, 2010b). Prisoners are given opportunities to be remediated if they are determined to be low functioning and educational training to complete the GED examination if they do not possess the certification and/or placement into a skilled trades or job preparation program. Due to the fact that prisoners entering the system are cognitively low-functioning and have had unsuccessful experiences previously in education and employment, it takes time and significant effort to create an interest in learning and to bring them to a functional academic level (MDOC, 2010b).

As cited in Gordon and Weldon's (2003) research on the "Impact of Career and Technical Education," a meta-analysis by Wilson, Gallagher, and Mackenzie revealed that adult basic education, GED, and postsecondary education programs were more effective in reducing recidivism than correctional work and/or industries. The 2009 Report to the Legislature also found that prisoners who had no educational programming while incarcerated were re-incarcerated at a rate of 49.1%, compared to a 19.1% rate for those who completed an educational program (MDOC, 2010b). Prisoners receive Adult Basic Education (ABE), job education, and vocational education. According to a study completed by Washington State Institute of Public Policy (2006), a statistically significant correlation was found between the level of education, job, and vocational education and recidivism rate reductions: ABE (5.1%), job (4.8%), and vocational education (12.6%). According to the Offender Education Tracking System (OETS), during the calendar year 2010, MDOC prisoners passed 10,703 GED subsets allowing 1,831 inmates to earn their GEDs (MDOC, 2010b).

In the 2009 Report to the Legislature (MDOC, 2010c), various types of educational opportunities for its prisoners through MDOC Prison Education were listed:

- *Academic Education*: The academic education programs offered by the MDOC include: ABE and GED Preparation, including GED testing for those who do not have a high school diploma or GED completion. English as a Second Language (ESL) is provided to prisoners whose native language is not English and who are functioning below a 5<sup>th</sup> grade reading level (MDOC, 2010c).
- *Title I*: Title 1 is a federally-funded educational support service offered to all prisoners under the age of 21 who do not have a high school or GED completion and are enrolled in an academic program. This support service emphasizes employability soft skills and critical thinking skills from the Workers for the 21<sup>st</sup> Century curriculum. Soft skills refer to a cluster of personal qualities, habits, attitudes, and social graces that make someone a good employee and compatible to work with: strong work ethics, positive attitude, good communication skills, time management abilities, problem-solving skills, acting as a team player, self-confidence, ability to accept and learn from criticism, flexibility/adaptability, and working well under pressure (Lorenz, 2009).
- *Special Education*: Eligible prisoners who meet Federal guidelines specified by the Individuals with Disability Education Improvement Act (IDEA) are provided with Special Education Programming (MDOC, 2010c).
- *Career and Technical Education (CTE)*: This program is designed to provide work skills that are marketable in the community and to afford prisoners with opportunities to acquire and develop necessary job skills and aptitudes for meaningful, long-term

employment in these areas: Auto Body, Business Education Technology, Custodial Maintenance, Electronics, Food Technology and Hospitality, Optical Technology, Welding, Auto Mechanics, Building Trades, Computer Refurbishing, Horticulture, Machine Tool, and Visual Graphic Tech (MDOC, 2010c).

- *Transition Life Skills (TLS)* – This program includes employability, social and life skills (formerly called Pre-release).
- *Service Learning Projects/Prison Build-Prison Grow*; These projects allow prisoners to enhance workplace readiness skills through production projects that “give back.” These activities include participation in Habitat for Humanity housing projects, Department of Natural Resources, Beautification of Michigan Welcome Centers, and extensive community support projects (Michigan Department of Corrections, 2010c).

### **Michigan’s Community and Employment Readiness Training Program (CERT)**

CERT is a federally-funded program and is facilitated through partnerships with accredited postsecondary schools and other agencies. The course work primarily focuses on employment skills and related issues. Prisoners are also tested for a National Career Readiness Certificate. Michigan’s Department of Corrections was awarded a federal grant in 2001: Grants to States for Workplace and Community Transition Training for Incarcerated Youth Offenders Program (YOP) now called CERT, to give support for the State’s re-entry program with an employment focus where incarcerated youths could acquire functional literacy, life skills, and job skills. The grant emphasizes the achievement of functional literacy, life skills, and job skills by focusing on reparation of prisoners to enter the workforce or post-secondary education upon release from prison (MDOC, 2010a).

The CERT program is for prisoners 35 and younger who are expected to return to their communities within seven years of their earliest release date, and possess a high school diploma or GED. Other requirements for an inmate to participate in CERT is that they could not have committed intentional murder crimes, criminal sexual conduct crimes, or crimes against children (such as kidnapping, child endangerment, etc.) to be eligible to complete the WorkKeys<sup>®</sup> subassessments. Each inmate receives an orientation to the CERT program before they are given the opportunity to sign an agreement to participate. Those prisoners who decline may request placement into the program at a later date. Of those who enroll in the CERT program, the ACT's WorkKeys<sup>®</sup> tests are used to assess their basic skill levels.

A minimum score of a Level 3 must be attained in each of the three National Career Readiness Certificate (NCRC) subassessments of Applied Math, Reading for Information, and Locating Information. Bronze, Silver, or Gold levels are awarded and may be used in *Michigan Works!*, Michigan's training and placement program that uses the NCRC results upon release from prison to help find employment. If a level 3 is not achieved by the prisoner, the inmate is dropped from the program. If a prisoner scores a Level 3 or 4 on the WorkKeys<sup>®</sup>, a short term, closed enrollment remediation class is offered that correlates to the WorkKeys<sup>®</sup> test. These non-credit remediation courses are offered by Montcalm Community College and include face-to-face and computer assisted instruction incorporating Key Train printed material and PLATO software. Once the remediation courses have been completed and the prisoner scores high enough, then the prisoner can choose one of two certificates issued by Montcalm Community College: Retail Management or Entrepreneurship (Montcalm Community College, n.d). Coursework in Parenting Skills and conflict resolution has been an optional component depending on the contract enforced during that time frame.

**Michigan State Industries (MSI)**

Michigan prisons contain a disproportionately large group of people who have been unemployed or underemployed for all the work-age years of their lives, like many prisons throughout the United States. The unemployment or underemployment statuses may be due to a lack of education, poor role models, discrimination, or from residence in an area of the state which has high unemployment. Many prisoners lack employable skills and/or good work habits (Michigan State Industries, n.d.a). The MSI program has prisoners age 17 and older who have committed various crimes.

The MDOC's goals and objectives of MSI are:

The Department believes it must employ every able-bodied prisoner in the system in an assessment that provides meaningful work experiences. This is because the Department believes that sufficient work assignments will affect: Crime Reduction, Prison Management, and Prisoner self-sufficiency. (Michigan State Industries, n.d.a, p. 1, para 1)

By training the prisoners through the MSI program, MDOC hopes to improve recidivism. *Intake Process Saves Time and Money* MDOC (2002) asserted that sufficient work assignments can affect crime reduction, prison management, and prisoner self-sufficiency (MDOC, 2002). According to Sampson and Laub (1993), the more stable the employment, the lower the arrest rate. MDOC wants the prisoners to obtain marketable skills and work experience to apply to possible employment when they leave and for those with a life sentence, a job to improve restlessness and tension within the prison. Even though the pay given to the prisoners is minimal, frequently it is sent home to their families or saved for when the prisoner is released into society (MDOC, 2002). See a list of the types of products made at the various correctional facilities in Michigan (See Appendix G).

### **History of Michigan State Industries (MSI).**

In 1843, entrepreneurs paid 34¢ to 56¢ per day to the prison in Jackson, Michigan for each prisoner that worked for them where private manufacturers brought in the equipment and supplies, while the prison supplied the building. The prisoners received none of the money. At this time, prisoners were making harnesses and other farm equipment, as well as woolen and cotton goods, carpeting, farm tools, saddles, trees and trimmings, steam engines and boilers, barrels and copper ware, shoes and laundry products. This contract system continued until 1869 with 517 of the 625 prisoners at Jackson and became nearly nonexistent by 1900. License plates were also manufactured at Jackson as well as street and road signs in 1918.

By 1922, the state produced and sold products on the open market because it owned its own factories by this time. Michigan prisoners have mined coal, manufactured bricks and tile, and made cigars, tombstones and binder wine (Michigan Department of Corrections, 2002).

The Hawes-Cooper Bill of 1935 was passed by Congress prohibiting interstate commerce of prison goods, while Michigan's Legislature in 1937 limited the sales of prison products to state institutions and other wholly tax-supported agencies. This legislation might have been a reaction to the times during the Depression to protect free industry and labor (MDOC, 2002). The Correctional Industries Act was amended in 1980 to eliminate the restrictions to allow MSI to sell its products to nonprofit organizations and government agencies in other states, and set prices to provide for a margin in direct and indirect costs. Within five years, MSI became self-supporting. A State statute stipulates that MSI may *only* sell its products and services to government entities and nonprofit (501[c]3) organizations (Michigan State Industries, n.d.b). MSI is a division of The Office of Employment Readiness (OER). The OER team provides prisoners of the Michigan Department of Corrections academic, career, and technical education,



and workplace skills training programs to acquire and maintain a job. The mission of these programs is within a continuous quality improvement environment to ensure the most cost effective programs (Michigan State Industries, n.d.b).

### **Summary of the Literature Review**

During the colonial times, education was basically for the elite. When the industrial revolution occurred, new job skills for the lower and middle class had to be developed to meet the needs of society. To improve job skills, a formal avenue of education was created to promote job and trade skills, reading, writing, and math skills for all citizens. People who did not complete their primary education during this period had to find ways to improve these skills (i.e., adult education). In the early 1880s, an educational model for adults was created that provided free instruction in practical knowledge and technological skills. By the late 1800s and early 1900s, adult education in Michigan began in the Upper Peninsula and in the 1930s found its way to the Detroit area.

During WWII, the GED was created for service people who had not graduated from high school. This credentialing helped veterans to obtain a job upon returning from duty and made it easier to pursue vocational, educational, or personal goals. Some people continue to believe that GED credentials are not equivalent to the high school graduation requirements. The latest revision of the GED occurred in 2002 with new subtests developed for math, social studies, science, reading, and writing skills.

Differences have been found between educational attainment and employment. A greater percentage of GED recipients were employed compared to those with less than a high school education who were out of the labor force. The person with a GED was less likely to be successful than the high school graduate, due to character and personality. The GED person was

considered to be smarter than the high school dropout who did not get their GED, but typically earned less than a high school graduate, but more than the high school dropouts.

American prisons fluctuated philosophically from rehabilitation to punishment. The prison system is concerned with providing prisoners with education that ranged from basic literacy skills to vocational training to a college degree. Educational and vocational programs helped prisoners to develop practical skills and responded to the idea that every person has the right to be educated. Research has shown that participation in prison-based education served to differentiate successful parolees from unsuccessful ones. However, other studies that looked at recidivism pertaining to education did not include academic policy and social programs associated with correctional education. As a result, the studies did not find that education provided positive support to reduce offender recidivism. An 11 state study found that released prisoners with higher levels of education had lower recidivism rates. At the Huntsville Correctional Facility, the recidivism rate was lower for released prisoners who were involved in a vocational education or GED program (Flanagan, 1994).

Inmates in Michigan prisons are assisted in developing functional literacy, employability, and career readiness skills. MDOC uses the ACT WorkKeys<sup>®</sup> subassessments to determine the level of work skills for each prisoner in their Michigan's Community and Employment Readiness Training (CERT) and Michigan State Industries (MSI) programs. WorkKeys<sup>®</sup> assesses gaps between inmates' current job readiness skill level and skills needed on the job. Based on the results of these tests, inmates can receive training with work skills to enhance their employment options upon release.

No published literature was found that compared Michigan's inmates in the CERT program to the inmates in the MSI with respect to demographic and criminogenic factors and

levels attained on the three ACT WorkKeys<sup>®</sup> subassessments. The findings of this study can be used to fill the gap in the argument regarding the importance of continuing educational programs in prisons to reduce recidivism and increase employability of released prisoners.

## **CHAPTER 3**

### **METHODOLOGY**

This chapter presents an overview of the methodology that was used to collect and analyze the data needed to address the research questions developed for the study. The topics included in Chapter 3 are: research design, variables in the study, population and sample, instrumentation, data collection procedures, and data analysis.

#### **Research Design**

The design of this research is non-experimental and descriptive, using retrospective data from male and female prisoners in Michigan's Community and Employment Readiness Training (CERT) program and male prisoners in the Michigan State Industries (MSI) who completed the three WorkKeys<sup>®</sup> subassessments applied mathematics, locating information, and reading for information and obtaining at least a Level 3 on each assessment. This type of research design is appropriate when using archival data from closed records, with no additional data directly collected from the inmates. The demographic and criminogenic data and WorkKeys<sup>®</sup> results were retrieved from the administrative records on file with the Michigan Department of Corrections (MDOC).

#### **Variables Associated with Inmates' Level of Attainment on the WorkKeys<sup>®</sup> Subassessments**

Demographic variables retrieved from MDOC included: age, gender, race, grade last attended, whether the prisoner had a high school diploma or GED before first incarceration or obtained a GED while incarcerated, time between getting the high school diploma or GED and taking the WorkKeys<sup>®</sup> subassessments; age, and marital status at time of first conviction and at the time of the study. Measures from three WorkKeys<sup>®</sup> subassessments (applied mathematics, locating information, and reading for information) were used as dependent variables in this

analysis. Criminogenic variables are variables that were associated with conviction and incarceration. Table 7 presents the types of offenses that were included in this study.

Table 7

*Types of Offenses and Criminality Index Weights*

Type of Offense	Weight	Examples of Offenses
Drugs	1	Possession of controlled substance, delivery and manufacturing of controlled substance
Other nonassaultive	2	Weapons, felony firearms; home invasion; unlawful driving away; escape from prison; larceny; receiving and concealing stolen property; carrying a concealed weapon; resale fraud; breaking and entering of an occupied dwelling; uttering and publishing; operating under the influence of alcohol (3 <sup>rd</sup> offense)
Other assaultive	3	Armed robbery; resisting and obstruction of justice; child abuse; fleeing a police officer, assault with intent to commit murder, bank robbery; robbery unarmed; assault with a dangerous weapon; unlawful imprisonment; felonious or reckless driving;
Sex offenses	4	Criminal sexual conduct 1, 2, and 3; accosting children for immoral purposes; indecent exposure;
Involving death	5	Involuntary manslaughter; murder, 1 <sup>st</sup> degree, 2 <sup>nd</sup> degree; operating under the influence causing death; manslaughter with motor vehicle

The researcher created a criminality index for the type of offenses committed by applying a weight relative to the degree of severity. Drugs received a weight of 1, other nonassaultive offenses were weighted with a 2, other assaultive received a weight of 3, with sex offenses given a weight of 4, and offenses involving death weighted as a 5. Additional criminogenic variables retrieved from MDOC in this study included: time served (in years) and number of convictions.

### **Setting**

The population for this study was individuals incarcerated in Michigan's prison system for the Community and Employment Readiness Training (CERT) and Michigan State Industries

(MSI) programs. These programs are housed in various correctional facilities around the state. See Appendices D and E for a list of the prisons associated with the CERT and MSI programs.

Prison security is rated on a scale from I to V. In general, the higher the security level, the more security risk a prisoner presents in terms of manageability or escape potential. Each of the five levels is described to provide information regarding how Michigan handles security among prisoners. The security measures increase from the Level I to Level V designation. The type of fencing around the perimeter runs from double/triple chain link fencing 12'-16' in height in conjunction with razor ribbon fencing. As the security level increases, razor ribbon fencing may be included on the sides and tops of the exterior fencing. Electrical fencing is incorporated at the higher levels of security. Level V security has an added concrete wall around the perimeter and may incorporate stun fencing. Armed patrol vehicles patrol the perimeter at all levels. The perimeter at the various levels changes from cameras to electronic surveillance equipment. The number of gun towers range from zero to a few at the Level I security correctional facilities to eight gun towers at Level V. Housing at Levels I and II may be a room with four double bunk beds or an open bay with seven to eight beds to Level V housing consisting of five bi-level, double winged single cell units. Level V prisons may include detention, temporary segregation, and secure status out-patient treatment cells, and may have designated administrative segregation (affords prisoner outdoor recreation in single occupancy security exercise modules). Jobs are available for all Level II prisoners, including those at a Michigan State Industries factory.

### **Population**

The population defined for this study consisted of inmates who had participated in the Michigan CERT and MIS programs. Prisoners who qualified to participate in the CERT program

had to be at least 17 years of age, but not older than 36 years. The minimum age qualification for the MSI was 17 years. The inclusion criteria for the present study were:

- 18 years of age and older for the MSI program
- 18 to 35 years of age inclusive for the CERT program
- Held either a department-verified high school diploma or GED prior to taking the WorkKeys<sup>®</sup> subassessments for the prisoners in the CERT program and no educational restriction on the prisoners in the MSI program
- Completed the three WorkKeys<sup>®</sup> subassessments with at least a minimum Level of 3

The information for the study was obtained from prisoner records on file with MDOC. Permission to access the records was obtained from the Manager of Risk/Classification and Program Evaluation Section, Office of Research and Planning, Michigan Department of Corrections (See Appendix H)

### **Sample**

The purposive sample was randomly selected from records of prisoners (male and female) in Michigan's CERT program and male prisoners in Michigan's MSI program. A purposive sample is used when the participants have to meet specific criteria for inclusion in the study. In this study, the participants had to be incarcerated and in either the CERT or MSI programs. They had to have completed either a high school diploma or a GED prior to taking the WorkKeys<sup>®</sup> subassessments for the CERT, but not for the MSI program, and they had to achieve a Level 3 on each of the three subassessments, applied mathematics, locating information, and reading for information. The records are maintained at a central location by the Michigan Department of Corrections. The study used only retrospective data from the prisoners' files. No additional data were collected that could require encounters with the prisoners. All inmates in

CERT had been selected by the Michigan Department of Corrections (MDOC) staff and were within seven years of release.

### **Sample size.**

G\*Power 3.1 (Faul, Erdfelder, Buchner, & Lang, 2009) was used to determine the number of prisoner records that were needed for the study. Establishing the power of the test provides assurances that the sample size would be sufficient to make correct judgments on the results and minimize the probability of a Type 2 error, accepting a false null hypothesis (Faul et al., 2009). Using a two-tailed test, with an alpha level of .05 and an effect size of .50, a sample of 212 prisoner files (106 for the CERT and 106 from the MSI program) was needed to obtain a power of .95. Any additional records would increase the power of the analysis to make a correct decision on the research questions. As the power increased the likelihood of a Type II error decreased, or making a false negative conclusion decreased.

### **Data Collection Procedures**

Following approval from the Michigan Department of Corrections (MDOC) and the Human Investigation Committee (HIC) at Wayne State University, the researcher began the data collection process. The MDOC was contacted to determine how they would provide the data to the researcher.

The data had all identifying information (e.g., name, address, social security numbers, prisoner identification numbers) eliminated. No consent forms were required. By removing all identifying information from the spreadsheet, the anonymity of the prisoners is assured. All results of the data analysis are presented in aggregate to provide assurances that no prison or prisoner could be identified in the final report.



The researcher received the data from the MDOC on an Excel spreadsheet that included both the demographic and criminogenic variables and corresponding WorkKeys<sup>®</sup> subassessment scaled scores and attained levels. A data clerk from the MDOC was responsible for all data entry on the spreadsheets using a random sample of archived records from prisoners in the CERT and MIS programs.

### **Data Analysis**

Data from the prisoners' records obtained from MDOC were entered into an IBM-SPSS file for statistical analysis. The information from the demographic section of the form was summarized using crosstabulations, frequency distributions, and measures of central tendency and dispersion. The results of these analyses provided a profile of participants in the CERT and MSI programs. The research questions were addressed using inferential statistical analyses, including Spearman rank order correlations, factorial multivariate analysis of covariance, and stepwise multiple linear regression analysis. Chi square tests for independence were used to compare the results of the prisoners' WorkKeys<sup>®</sup> subassessments with national averages for the WorkKeys<sup>®</sup> subassessments for nonincarcerated adults. The results of these nonhypothesized findings are included in Chapter IV under Ancillary Analyses. All decisions on the statistical significance of the findings were made using a criterion alpha level of .05. Table 8 presents the statistical analyses that were used to address each of the research questions.

Table 8

*Statistical Analysis*

Research Questions	Instruments	Data Analysis Techniques
1. What is the relationship between the level of education of a prisoner and level attained on the three WorkKeys <sup>®</sup> subassessments? Does this relationship differ between prisoners in the CERT and prisoners in MSI?	<p><u>Dependent Variables</u> WorkKeys<sup>®</sup> subassessments</p> <ul style="list-style-type: none"> <li>• Applied mathematics,</li> <li>• Locating information</li> <li>• Reading for information</li> </ul> <p><u>Independent Variables</u> Educational data: high school diploma/GED prior to first incarceration or after incarceration Highest level of completed education Type of program</p> <ul style="list-style-type: none"> <li>• CERT</li> <li>• MSI</li> </ul>	Spearman rank order correlations were used to determine the relationship between the level of education and scaled scores on the WorkKeys <sup>®</sup> subassessments. The correlations were obtained for each group (CERT and MSI), with the outcomes compared to determine if the relationship between WorkKeys <sup>®</sup> subassessments and educational level differed between the two groups.
2. Is there a difference between CERT and MSI prisoners having a high school diploma or GED before first incarceration or during incarceration and level attained on the three WorkKeys <sup>®</sup> subassessments?	<p><u>Dependent Variables</u> WorkKeys<sup>®</sup> subassessments</p> <ul style="list-style-type: none"> <li>• Applied mathematics,</li> <li>• Locating information</li> <li>• Reading for information</li> </ul> <p><u>Independent Variables</u> Type of Program (CERT or MIS) Time when Education was Completed (Prior to first incarceration and after incarceration)</p> <p>Covariates Educational data: high school diploma/GED prior to first incarceration or after incarceration Highest level of completed education</p>	<p>2 x 2 factorial multi-covariate analysis of variance was used to determine if scores on the three WorkKeys<sup>®</sup> subassessments differ by type of program and timing of degree after removing the effects of educational data.</p> <p>If a statistically significant difference between the two programs and when they completed their education (prior to first incarceration and after incarceration) was obtained on the omnibus F-test, the univariate F tests were examined to determine which of the three WorkKeys<sup>®</sup> subassessments were contributing to the significant findings.</p> <p>The mean scores for the WorkKeys<sup>®</sup> were examined to determine the direction of the differences in scores between the two programs and the two educational levels.</p>
3. Can specific demographic and criminogenic variables of a prisoner in the CERT and MSI programs be used to predict the scaled scores attained on the three WorkKeys <sup>®</sup> subassessments?	<p><u>Dependent Variables</u> WorkKeys<sup>®</sup> data:</p> <ul style="list-style-type: none"> <li>• Applied mathematics,</li> <li>• Locating information</li> <li>• Reading for information</li> </ul> <p><u>Independent Variables</u> Age Gender Ethnicity/Race Educational Level Criminality Index Time served in years Number of offenses</p>	<p>Separate stepwise multiple linear regression analyses were used to determine which of the predictor variables can be used to predict or explain performance level in the three WorkKeys<sup>®</sup> subassessments: applied mathematics, locating information, and reading for information.</p> <p>Categorical variables (gender, ethnicity/race, and educational level) were dummy coded to allow their use in the stepwise multiple linear regression analysis.</p>

## **CHAPTER 4**

### **RESULTS OF DATA ANALYSIS**

#### **Introduction**

This chapter presents the results of the data analyses that were used to provide a description of prisoners whose records were included in the study and to address the research questions that were posed for the study. The data analysis is divided into four sections. The first section uses descriptive statistics to provide a profile of the two groups of incarcerated people, with descriptive statistics used to present baseline information on the dependent variables presented in the second section of the chapter. The third section of the chapter includes the three research questions and the results of the inferential statistical analyses used to answer them. The fourth section contains ancillary findings.

#### **Restatement of the Purpose**

The purpose of this study is to determine which demographic and/or criminogenic variables are associated with the level attained on the three WorkKeys<sup>®</sup> subassessments by the prisoners in Community and Employment Readiness Training (CERT) and the Michigan State Industries (MSI) programs and to determine which variables have similar associations with the two groups.

#### **Description of the Sample**

##### **Personal Characteristics**

Requirements for participation in each of the programs differ. To be included in the CERT program, offenders must be 35 years of age or younger, be within seven years of release, and not have committed specific crimes (e.g., sexual offenses, intentional murder crimes, or crimes against children such as kidnapping, child endangerment, etc.). No restrictions are placed

on inmates in the MSI program. Participants in the CERT program must possess either a high school diploma or GED before being admitted to the program, while MIS participants are not required to possess either as a condition of being in the program. Participants in both programs had to have achieved a Level 3 on each of the three subassessments (applied mathematics, locating information, and reading for information) on the ACT WorkKeys<sup>®</sup> to be included in the sample.

The staff at the Michigan Department of Corrections (MDOC) randomly selected the participants from their records. They were given the inclusion criteria and asked to choose an equal number of participants in each of the two programs (CERT and MSI). The criteria did not include gender as a condition of inclusion.

Personal demographic information was obtained from the MDOC on 212 participants, 106 in the CERT program and 106 in the MSI program. The age of the participants was compared between the two groups using frequency distributions. Table 9 presents results of this analysis.

Table 9

*Descriptive Statistics – Age of the Incarcerated Participants by Group*

Program	N	M	SD	Median	Range	
					Minimum	Maximum
CERT	106	28.04	4.11	28	20	35
MSI	106	45.52	9.52	44	24	70

The mean age of participants in the CERT program was 28.04 (sd = 4.11) years, with a median of 28 years. The range of ages for participants in the CERT program was from 20 to 35

years. The participants in the MSI program had a mean age of 45.52 (sd = 9.52) years, with a median age of 44 years. Participants in the MSI program ranged from 24 to 70 years of age.

The gender of the participants was obtained from prison records. The gender was crosstabulated by group for presentation in Table 10.

Table 10

*Crosstabulations – Gender by Group*

Gender	<u>Group</u>					
	<u>CERT</u>		<u>MSI</u>		<u>Total</u>	
	N	%	N	%	N	%
Female	23	21.7	0	0.0	23	10.8
Male	83	78.3	106	100.0	189	89.2
Total	106	100.0	106	100.0	212	100.0

The majority of the participants (N = 189, 89.2%) in the study were male. Included in this number were 83 (78.3%) in the CERT program and 106 (100.0%) in the MSI program. Twenty-three (21.7%) females in the study were in the CERT program. Women are incarcerated and participate in the MSI program; however no females were included in the random sample of MSI participants. It is unknown if any women were in the pool from which the sample was drawn or if any of the females had not met the criteria of achieving at least a score of Level 3 on the three WorkKeys<sup>®</sup> subassessments.

The race of the participants whose records were included in the study was crosstabulated by group membership. The results of this analysis are presented in Table 11.

Table 11

*Crosstabulations – Race by Group*

Race	<u>Group</u>					
	<u>CERT</u>		<u>MSI</u>		<u>Total</u>	
	N	%	N	%	N	%
African American	44	41.5	47	44.3	91	42.9
Caucasian	62	58.5	58	54.8	120	56.6
Mexican	0	0.0	1	0.9	1	0.5
Total	106	100.0	106	100.0	212	100.0

The majority of the participants in the study (n = 120, 56.6%) were Caucasian. This number included 62 (58.5%) in the CERT group and 58 (54.8%) in the MSI group. Of the 91 (42.9%) participants whose ethnicity was African American, 44 (41.5%) were in the CERT program and 47 (44.3%) were in the MSI program. One (0.9%) participant in the MSI program was Mexican.

The participants' self-reported marital statuses that were obtained at arrest and their current statuses obtained from their records were crosstabulated by group membership. Table 12 presents results of this analysis.

Table 12

*Crosstabulations – Marital Status Before First Incarceration and Currently by Group*

Marital Status	<u>Group</u>					
	<u>CERT</u>		<u>MSI</u>		<u>Total</u>	
	N	%	N	%	N	%
<u>Before First Incarceration</u>						
Divorced	5	4.7	21	19.8	26	12.3
Married	7	6.6	20	18.9	27	12.7
Single, Never Married	91	85.9	59	55.6	150	70.8
Separated	3	2.8	6	5.7	9	4.2
Total	106	100.0	106	100.0	212	100.0
<u>Currently</u>						
Divorced	1	0.9	20	18.9	21	9.9
Married	1	0.9	18	17.0	19	9.0
Single, Never Married	34	32.1	52	49.0	86	40.6
Separated	2	1.9	2	1.9	4	1.9
Unknown	68	64.2	14	13.2	82	38.7
Total	106	100.0	106	100.0	212	100.0

The majority of the participants (n = 150, 70.8%) were single, never married before first incarceration. Included in this number were 91 (85.9%) participants in the CERT program and 59 (55.6%) participants in the MSI program. Five (4.7%) participants in the CERT program and 21 (19.8%) in the MSI program were divorced before first incarceration. Of the 27 (12.7%) who were married before first incarceration, 7 (6.6%) were in the CERT program and 20 (18.9%) were in the MSI program. Three (2.8%) participants in the CERT program and 6 (5.7%) participants in the MSI program were separated from their spouses before first incarceration.

The largest group of participants (n = 86, 40.6%) currently was single, never married. This number included 34 (32.1%) participants in the CERT program and 52 (49.0%) participants in the MSI program. One (0.9%) participant in the CERT program and 20 (18.9%) participants in the MSI program currently were divorced. Nineteen (9.0%) participants, including 1 (0.9%) in the CERT program and 18 (17.0%) in the MSI program, currently were married, while 2 (1.9%)

in each program were separated from their spouses. Current marital status was unknown for 68 (64.2%) participants in the CERT program and 14 (13.2%) participants in the MSI program. The large number of unknown marital statuses among participants in the CERT program may have resulted from a lag in reporting changes in marital status and the time when their records are updated. Because the marital status is updated by the prisoners, some may not have reported changes in their marital status (e.g., divorce by spouse), resulting in a large number of unknown values.

The educational level of the participants was obtained from their MDOC prison records and crosstabulated by group membership. The results of this analysis are presented in Table 13.

Table 13

*Crosstabulations – Educational Level by Group Before First Incarceration*

Educational Level	<u>Group</u>					
	<u>CERT</u>		<u>MSI</u>		<u>Total</u>	
	N	%	N	%	N	%
Unknown	1	0.9	1	0.9	2	0.9
8 <sup>th</sup> grade or less	14	13.2	6	5.7	20	9.4
Some high school	35	33.0	35	33.0	70	33.0
GED	23	21.7	31	29.2	54	25.5
High school diploma	27	25.4	23	21.8	50	23.7
Some college	6	2.8	7	6.6	13	6.1
College degree	0	0.0	3	2.8	3	1.4
Total	106	100.0	106	100.0	212	100.0

The largest group of participants (n = 70, 33.0%), including 35 (33.0%) in the CERT program and 35 (33.0%) in the MSI program, had completed some high school. Twenty-three (21.7%) participants in the CERT program and 31 (29.2%) participants in the MSI program had



obtained a GED, while 27 (25.4%) in the CERT program and 23 (21.8%) in the MSI program had high school diplomas. Three (2.8%) participants in the MSI program reported the completion of a college degree.

Participants in the MSI program had attained higher levels of education than participants in the CERT program. None of the participants in the CERT program had completed college, while three participants in the MSI program reported completion of a college education. The members of the MSI program were older and may have had more opportunities to complete their education before becoming incarcerated. However, more CERT participants completed a high school education, which might account for higher overall scores on the WorkKeys® subassessments. Some argue that the quality of education obtained by the GED is not equivalent to that of a high school diploma (Kane County Regional Office of Education, 2009).

### **Criminogenic Factors**

The criminogenic factors, including number of convictions, number of prison commitments, length of time in prison, and the types of offenses were obtained from state records. The responses were summarized by type of program, CERT or MSI, for presentation in this section. Table 14 presents the number of convictions, number of prison commitments, and length of time in prison.

Table 14

## Descriptive Statistics – Criminogenic Factors

Factor	N	Mean	SD	Median	Range	
					Minimum	Maximum
Number of convictions						
CERT	106	3.11	2.51	2.00	1	14
MSI	106	3.74	3.28	3.00	1	21
Number of prison commitments						
CERT	106	1.30	.52	1.00	1	3
MSI	106	1.82	1.35	1.00	1	7
Time Served in Prison (Years)						
CERT	106	5.43	3.24	4.83	1.19	15.86
MSI	106	16.22	9.11	14.20	3.79	48.35

The inmates in the CERT group had a mean of 3.11 (sd = 2.51) convictions. The median number of convictions for this group was 2.00, with a range from 1 to 14 convictions. The MSI group had a mean of 3.74 (sd = 3.00) convictions. The range of convictions was from 1 to 21, with a median of 3.00 convictions.

The mean number of prison commitments for members of the CERT group was 1.30 (sd = .52), with a median of 1.00 convictions. The range of convictions was from 1 to 3. The MSI group had a mean of 1.82 (sd = 1.35) commitments, with a median of 1.00 convictions. The number of commitments ranged from 1 to 7 for the MSI group.

The time served in prison for the CERT group was an average of 5.43 (sd = 3.24) years, with a median of 4.83 years. The time in prison for this group was from 1.19 to 15.86 years. For the MSI group, the mean time in prison was 16.22 (sd = 9.11) years, with a median of 14.20 years. The time in prison for the MSI group ranged from 3.79 to 48.35 years.

The participants in the CERT program generally were younger and had been incarcerated for shorter periods than participants in the MSI program, who tended to be older. As noted

above, conditions for being included in the CERT program were an upper age limit of 35 years and being within seven years of release. The prisoners in the MSI program did not have any similar conditions placed on their participation in the program.

The types of offenses for which the participants in the two programs were convicted were summarized using five major types: drugs, other nonassaultive, other assaultive, sex offenses, involving death. The participants could have been convicted on more than one type of offense; therefore, the number of responses for type of offense could exceed the number of participants. Table 15 presents results of this analysis.

Table 15

*Crosstabulations – Types and Number of Offenses*

Types and Number of Crimes	<u>Group</u>					
	<u>CERT</u>		<u>MSI</u>		<u>Total</u>	
	N	%	N	%	N	%
<b>Drugs</b>						
0	91	85.8	91	85.8	182	85.8
1	7	6.7	11	10.5	18	8.5
2	3	2.9	2	1.9	5	2.4
3	1	0.9	1	0.9	2	0.9
4	2	1.9	0	0.0	2	0.9
5	1	0.9	0	0.0	1	0.5
7	1	0.9	0	0.0	1	0.5
13	0	0.0	1	0.9	1	0.5
<b>Other Nonassaultive</b>						
0	50	47.2	50	47.2	100	47.2
1	28	26.5	29	27.5	57	26.9
2	9	8.5	8	7.5	17	8.0
3	5	4.7	6	5.7	11	5.2
4	5	4.7	4	3.8	9	4.2
5	1	0.9	2	1.9	3	1.4
6	3	2.8	1	0.9	4	1.9
7	0	0.0	3	2.8	3	1.4
8	2	1.9	1	0.9	3	1.4
10	2	1.9	1	0.9	3	1.4
12	1	0.9	0	0.0	1	0.5
15	0	0.0	1	0.9	1	0.5
<b>Other Assaultive</b>						
0	31	29.2	51	48.1	82	38.7
1	44	41.6	26	24.5	70	33.0
2	17	16.0	16	15.1	33	15.6
3	10	9.4	7	6.6	17	8.0
4	2	1.9	4	3.8	6	2.8
5	2	1.9	2	1.9	4	1.9
<b>Sex Offenses</b>						
0	106	100.0	65	61.3	171	80.7
1	0	0.0	25	23.7	25	11.7
2	0	0.0	7	6.6	7	3.3
3	0	0.0	3	2.8	3	1.4
4	0	0.0	4	3.8	4	1.9
8	0	0.0	1	0.9	1	0.5
11	0	0.0	1	0.9	1	0.5
<b>Involving Death</b>						
0	94	88.7	81	76.4	175	82.5
1	10	9.4	22	20.8	32	15.2
2	0	0.0	3	2.8	3	1.4
3	2	1.9	0	0.0	2	0.9

*Drugs.* The majority of the participants in both the CERT (n = 91, 85.8%) and MSI (n = 91, 85.8%) had not committed crimes involving drugs. The participants in the CERT group had committed from 1 to 7 crimes involving drugs, with most of the MSI participants committing from 1 to 3 crimes involving drugs. One (0.9%) participant in the MSI group had committed 13 crimes involving drugs.

*Other nonassaultive.* One hundred (47.2%) participants in the CERT (n = 50, 47.2%) and the MSI (n = 50, 47.2%) had not committed crimes classified as other nonassaultive. The largest group of participants in both the CERT (n = 28, 26.5%) and MSI (n = 29, 27.5%) groups had committed one other nonassaultive type crime. The number of other nonassaultive crimes committed by individuals in the CERT group ranged from 1 to 12, while individuals in the MSI group had committed from 1 to 15 crimes in this category.

*Other Assaultive.* Thirty-one (29.2%) participants in the CERT group and 51 (48.1%) participants in the MSI group had not committed any crimes categorized as other assaultive. Forty-four (41.6%) of the participants in the CERT group and 26 (24.5%) of the participants in the MSI group had committed one crime in this category. The number of other assaultive crimes committed by participants in both the CERT and MSI group ranged from 1 to 5.

*Sex Offenses.* None of the participants in the CERT group had committed sex offenses, as participation in the CERT program was limited to prisoners who had not committed sex offenses. Sixty-five (61.3%) participants in the MSI group had not committed any sex offenses, with 25 (23.7%) having committed one sex offense. The number of sex offense crimes committed by the MSI group ranged from 1 to 11.

*Involving Death.* The majority of participants in both the CERT (n = 94, 88.7%) and MSI (n = 81, 76.4%) groups had not committed crimes involving death. Ten (9.4%) participants in the

CERT group and 22 (20.8%) participants in the MSI group had committed one crime involving death. Two (1.9%) participants in the CERT group had committed three crimes involving death, with three (2.8%) participants in the MSI group having committed two crimes involving death.

Participants in the MSI group appeared to have committed offenses that were more serious than those in the CERT group. One requirement for inclusion in the CERT group was that they could not have committed any type of sexual offense. As shown on the table, the participants in the MSI group had committed sex offenses, while those in the CERT group had no sex offenses. While some members of the CERT group had committed an offense involving death (e.g., manslaughter), they were precluded from participation in the CERT program if they had committed first or second degree murder.

The researcher created a criminality index for the type of offenses committed by applying a weight relative to the degree of severity. Drugs received a weight of 1, other nonassaultive offenses were weighted with a 2, other assaultive received a weight of 3, with sex offenses given a weight of 4, and offenses involving death weighted as a 5. The criminality index was summarized using descriptive statistics for presentation in Table 16.

Table 16

*Descriptive Statistics – Criminality Index*

Group	N	Mean	SD	Median	Range		t	Sig
					Minimum	Maximum		
CERT	106	7.53	5.51	6	1	30	-3.37	.001
MSI	106	10.53	7.32	8	2	44		

The mean criminality index for the CERT group was 7.53 (sd = 5.51), with a median of 6. The range of scores on the criminality index for the CERT group was from 1 to 30. The MSI

group had a mean criminality index of 10.53 (sd = 7.32), with a median of 8. The MSI groups' criminality index ranged from 2 to 44. Higher scores indicated greater numbers of offenses or higher degree of severity of crimes. To determine if a difference existed in the criminality index between the CERT and MSI group, the scores were compared using t-tests for independent samples. The results of this analysis were statistically significant,  $t(210) = -3.37, p = .001$ . This finding provided support that members of the MSI group had significantly higher scores on the criminality index.

The participants had completed three WorkKeys<sup>®</sup> subassessments: applied mathematics, locating information, and reading for information. The levels on these subassessments could range from 1 to 7, with Level 3 or greater considered a passing score. As part of the inclusion criteria for the participants in this study, they had to score at least at a Level 3 on each of the three subassessments. The scores at each level for the three subassessments are presented in Table 17.

Table 17

## Crosstabulations - WorkKeys® Outcomes

WorkKeys® Subassessment Levels	<u>Group</u>					
	<u>CERT</u>		<u>MSI</u>		<u>Total</u>	
	N	%	N	%	N	%
<b>Applied Mathematics</b>						
3	11	10.6	25	24.8	36	17.6
4	29	27.8	30	29.7	59	28.8
5	48	46.2	35	34.6	83	40.4
6	14	13.5	6	5.9	20	9.8
7	2	1.9	5	5.0	7	3.4
Total	104	100.0	101	100.0	205	100.0
Missing	2		5		7	
<b>Locating Information</b>						
3	7	6.6	26	27.1	33	16.3
4	80	75.5	53	55.2	133	65.9
5	19	17.9	16	16.7	35	17.3
6	0	0.0	1	1.0	1	0.5
Total	106	100.0	96	100.0	202	100.0
Missing	0		10		10	
<b>Reading for Information</b>						
3	0	0.0	4	3.9	4	1.9
4	21	20.0	45	43.6	66	31.7
5	51	48.6	36	35.0	87	41.8
6	25	23.8	14	13.6	39	18.8
7	8	7.6	4	3.9	12	5.8
Total	105	100.0	103	100.0	208	100.0
Missing	1		3		4	

*Applied Mathematics.* The largest group of participants (n = 83, 40.4%) scored a 5 on the WorkKeys® applied mathematics subassessment. This number included 48 (46.2%) participants in the CERT group and 35 (34.6%) in the MSI group. Two (1.9%) participants in the CERT group and 5 (5.0%) in the MSI group scored a 7 on the subassessment.

*Locating Information.* The majority of the participants (n = 133, 65.9%), including 80 (75.5%) participants in the CERT group and 53 (55.2%) participants in the MSI group, scored a 4 on the locating information subassessment on the WorkKeys®. One (1.0%) participant in the



MSI group scored a 6, while none of the participants in the CERT group scored a 6 on this subassessment.

*Reading for Information.* The largest group of participants ( $n = 87$ , 41.8%) scored a 5 on the reading for information test on the WorkKeys<sup>®</sup>. Of this number, 51 (48.6%) participants were in the CERT group and 36 (35.0%) were in the MSI group. Eight (7.6%) participants in the CERT group and 4 (3.9%) participants in the MSI group scored a 7 on this subassessment.

Participants in the MSI program were more likely to score at Levels 3 and 4 on each of on the applied mathematics and reading for information subassessments than prisoners in the CERT program. None of the prisoners in either group scored at Level 7 for locating information, with only one prisoner in the MSI group scoring at a Level 6 for this subassessment. The members of the CERT program typically were younger ( $m = 28.04$ ,  $sd = 4.11$  years) and had to have attained either a high school diploma or a GED as a condition of inclusion in the program. In contrast, the participants in the MSI program were older ( $m = 45.52$ ,  $sd = 9.52$  years) and did not have to have either the high school diploma or the GED. Because of the difference in age, the participants in the MSI program may have been further away from formal educational experiences, which may account for the difference in scores between the two groups.

The scaled scores for the three subassessments on the WorkKeys<sup>®</sup> assessment were summarized using descriptive statistics. These scores were used to address the research questions and provide baseline data on how participants in the CERT and MSI groups scored. Table 18 presents results of this analysis.

Table 18

*Descriptive Statistics – Scaled Scores for WorkKeys® Subassessments*

Subassessment	Number	Mean	SD	Median	Range		t-Value	Sig
					Minimum	Maximum		
Applied Mathematics								
CERT	106	78.40	3.82	78.50	69	90	2.51	.013
MSI	106	76.97	4.41	77.00	65	90		
Locating Information								
CERT	106	77.34	2.36	77.00	72	86	3.59	<.001
MSI	106	75.75	3.89	76.00	66	87		
Reading for Information								
CERT	106	80.26	2.72	80.00	72	88	2.99	.003
MSI	106	79.00	3.40	79.00	70	88		

The mean scores for the CERT and MSI programs were obtained for each of the three subassessments, applied mathematics, locating information, and reading for information. The participants in the CERT group had higher scores for each of the three subassessments. For the subassessment, applied mathematics, the CERT group had a mean score of 78.40 (sd = 3.82), while the MSI group had a mean score of 76.97 (sd = 4.41). The results of the t-test comparing the means of two independent samples was statistically significant,  $t = 2.51$ ,  $p = .013$ . Similar results in locating information were obtained for the comparison of the mean scaled scores for the CERT group ( $m = 77.34$ ,  $sd = 2.36$ ) and the MSI group ( $m = 75.75$ ,  $sd = 3.89$ ). The results of the t-test for two independent samples were statistically significant,  $t = 3.59$ ,  $p < .001$ . When the reading for information mean scale scores for the CERT group ( $m = 80.26$ ,  $sd = 2.72$ ) and the MSI group ( $m = 79.00$ ,  $sd = 3.40$ ) using t-tests for two independent samples were compared, the difference was statistically significant,  $t = 2.99$ ,  $p = .003$ . While these differences were statistically significant, care must be taken in interpreting the findings because the differences

were small in magnitude. Nevertheless, these results provide support that the scaled scores for the CERT group were higher than those attained by the MSI group.

### Research Questions

Three research questions were developed for the study. Each of these research questions was addressed using inferential statistical analyses. All decisions on the statistical significance of the findings were made using a criterion alpha level of .05.

**Research Question 1.** What is the relationship between the level of education of a prisoner and level attained on the three WorkKeys<sup>®</sup> subassessments? Does this relationship differ between prisoners in the CERT and prisoners in MSI?

The relationship between the level of education and level attained on the WorkKeys<sup>®</sup> subassessments was tested using Spearman rank order correlations. The years of formal education were categorized by level (8<sup>th</sup> grade or less, some high school, GED, high school diploma, some college, and college degree). The scaled scores on the three WorkKeys<sup>®</sup> subassessments were used in these analyses. The results of the correlations are presented in Table 19.

Table 19

*Spearman Rank Order Correlations - WorkKeys<sup>®</sup> Subassessment by Level of Education (N=212)*

	<u>Group</u>			
	<u>CERT (n = 106)</u>		<u>MSI (n = 106)</u>	
WorkKeys <sup>®</sup> Subassessments	r	p	r	p
Applied Mathematics	.19	.053	.28	.003
Locating Information	.22	.022	.19	.048
Reading for Information	.17	.082	.25	.011

The correlations between educational level and the WorkKeys<sup>®</sup> subassessment for applied mathematics were weak, but statistically significant for the MSI ( $r = .28$ ,  $p = .003$ ) group, but not the CERT group ( $r = .19$ ,  $p = .053$ ). Statistically significant correlations were obtained for locating information for both the CERT ( $r = .22$ ,  $p = .022$ ) and the MSI ( $r = .19$ ,  $p = .048$ ). When the correlations between reading for information and educational level were compared, the correlation for the MSI group ( $r = .25$ ,  $p = .011$ ) was statistically significant, while the correlation for the CERT group was not significant ( $r = .17$ ,  $p = .082$ ). For two of the WorkKeys<sup>®</sup> subassessments, applied mathematics and reading for information, the correlations were higher for the MSI group than for the CERT group.

The correlations between educational level and the scaled scores on the three subassessments were weak, but statistically significant. When the sample sizes are large (as in this study), smaller correlations are more likely to be statistically significant.

**Research Question 2.** Is there a difference between CERT and MSI prisoners having a high school diploma or GED before first incarceration or during incarceration and level attained on the three WorkKeys<sup>®</sup> subassessments?

A 2 x 2 multivariate analysis of covariance (MANCOVA) was used to determine if participants' scaled scores on the three WorkKeys<sup>®</sup> subassessments (applied mathematics, locating information, and reading for information) differed by their group membership (CERT or MSI) and time since getting their high school diploma or GED (before first incarceration/during incarceration). The level of education prior to their first incarceration was used as the covariate in this analysis. The results of this analysis are presented in Table 20.

Table 20

*2 x 2 Multivariate Analysis of Covariance - WorkKeys<sup>®</sup> by Group and Time since Completion of Education (Prior to First Incarceration)*

Source	Hotelling's Trace	F Ratio	DF	Sig	$\eta^2$
Educational Level Prior to First Incarceration	.07	4.87	3, 205	.003	.07
Group	.08	5.59	3, 205	.001	.08
Time when education was completed	.01	.95	3, 205	.416	.01
Group x Time since Completing Education	.06	3.77	3, 205	.012	.05

The comparison of the WorkKeys<sup>®</sup> subassessments outcomes by group revealed a statistically significant difference,  $F(3, 205) = 5.59$ ,  $p = .001$ ,  $\eta^2 = .08$ . When compared by time when education was completed (prior to first incarceration and after incarceration), the results were not statistically significant,  $F(3, 205) = .95$ ,  $p = .416$ ,  $\eta^2 = .01$ . The interaction between group and time when education was completed (prior to first incarceration and after incarceration) was statistically significant,  $F(3, 205) = 3.77$ ,  $p = .012$ ,  $\eta^2 = .05$ . The effect sizes ( $\eta^2$ ) obtained for the two main effects and the interaction effect were small, indicating that the results had little practical significance. The covariate, educational level prior to first incarceration, was statistically significant,  $F(3, 205) = 4.87$ ,  $p = .003$ ,  $\eta^2 = .07$ . To determine which of the WorkKeys<sup>®</sup> subassessments outcomes were contributing to the statistically significant results for group and for the interaction between group and time since degree, the between subjects effects were examined. Table 21 presents results of this analysis.

Table 21

*Between Subjects Effects - WorkKeys® by Group and Time when Education was Completed (Prior to First Incarceration and After Incarceration)*

Source	Sum of Squares	DF	Mean Squares	F Ratio	Sig	$\eta^2$
<b>Group</b>						
Applied Mathematics	131.65	1, 207	131.62	8.28	.005	.04
Locating Information	151.53	1, 207	151.53	15.30	<.001	.07
Reading for Information	102.15	1, 207	102.15	11.61	.001	.05
<b>Time when Education was Completed (prior to first incarceration and after incarceration)</b>						
Applied Mathematics	6.81	1, 207	6.81	.43	.515	<.01
Locating Information	2.33	1, 207	2.33	.24	.628	<.01
Reading for Information	3.04	1, 207	3.04	.35	.557	<.01
<b>Group x Time when Education was Completed (prior to first incarceration and after incarceration)</b>						
Applied Mathematics	3.30	1, 207	3.30	.21	.650	<.01
Locating Information	21.94	1, 207	21.94	2.22	.138	.01
Reading for Information	35.31	1, 207	35.31	4.02	.046	.02

Statistically significant differences were found for the three WorkKeys® subassessments by group membership. The effect sizes ( $\eta^2$ ) associated with the statistically significant differences were small, indicating that although the differences were significantly different from zero, the differences between groups had little practical significance. When the scaled scores for the three WorkKeys® subassessments were compared by time when education was completed (received before first incarceration and received during incarceration), the results were not significantly different. One WorkKeys® subassessment, reading for information, was found to differ on the interaction between group and time since incarceration. To determine how the groups were differing, descriptive statistics were obtained for each of the WorkKeys® subassessments for group and time since degree. Table 22 presents results of this analysis.

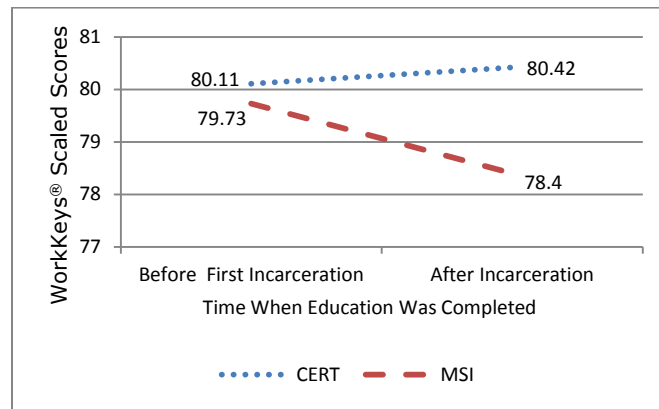
Table 22

*Descriptive Statistics - WorkKeys<sup>®</sup> by Group and Time when Education was Completed (Prior to First Incarceration and After Incarceration)*

WorkKeys <sup>®</sup>	N	M	SD
<b>Applied Mathematics</b>			
Group			
CERT	106	78.40	3.82
MSI	106	76.97	4.41
Time when Education was Completed			
Before first incarceration	102	78.41	4.22
After incarceration	110	76.48	4.04
Group x Time when Education was Completed			
CERT x Before first incarceration	54	79.17	3.93
CERT x After incarceration	52	77.60	3.57
MSI x Before first incarceration	48	77.56	4.41
MSI x After incarceration	58	76.48	4.38
<b>Locating Information</b>			
Group			
CERT	106	77.34	2.36
MSI	106	75.75	3.89
Time when Education was Completed			
Before first incarceration	102	76.82	3.44
After first incarceration	110	76.29	3.17
Group x Time when Education was Completed			
CERT x Before first incarceration	54	77.24	2.64
CERT x After incarceration	52	77.44	2.05
MSI x Before first incarceration	48	76.35	4.14
MSI x After incarceration	58	75.26	3.63
<b>Reading for Information</b>			
Group			
CERT	106	80.26	2.72
MSI	106	79.00	3.40
Time when Education was Completed			
Before first incarceration	102	79.93	2.72
After first incarceration	110	79.35	3.40
Group x Time when Education was Completed			
CERT x Before first incarceration	54	80.11	2.79
CERT x After incarceration	52	80.42	2.67
MSI x Before first incarceration	48	79.73	3.71
MSI x After incarceration	58	78.40	3.01

As noted above, the participants in the CERT group had higher scores for each of the three WorkKeys<sup>®</sup> subassessments, applied mathematics, locating information, and reading for information than the participants in the MSI group. When the statistically significant interaction

between group and time since completion of education was examined, the differences for reading for information indicated that participants who had completed their education prior to their first incarceration had higher scores than those who had completed their education after incarceration. To illustrate the differences for the interaction effect on the WorkKeys® reading for information subassessment, a graph of the interaction is presented in Figure 1.



*Figure 1: Interaction between Group and Time when Education Was Completed for WorkKeys® Reading for Information Subassessment*

As shown in Figure 1, the MSI participants who completed their education prior to their first incarceration had significantly higher scores on the reading for information subassessment on the WorkKeys® than MSI participants who completed their education after incarceration. While the participants in the CERT group had slightly lower scores on the reading for information assessment prior to their first incarceration compared to those who completed their education after their first incarceration, this difference was negligible.

The comparisons between group membership and scaled scores on the WorkKeys® subassessments provided support that the CERT group had scored significantly higher on the three subassessments, applied mathematics, locating information, and reading for information



than the participants in the MSI group. The participants in the CERT group had to have obtained a GED or a high school diploma as part of the criteria for being included in this program. The MSI program did not have similar educational requirements for participation. Because of this requirement, the CERT group may have been better prepared to complete the WorkKeys<sup>®</sup> subassessments. Statistical significance is influenced by sample size. To determine the practical effects of the differences, the effect sizes were calculated. The effect size analysis provides an additional tool to use when judging the significance of a finding (Vogt & Johnson, 2011). The effect sizes for each of the WorkKeys<sup>®</sup> subassessments were low, providing evidence that while the differences were statistically significant, they lacked practical significance. These results indicated that while CERT program participants had higher scores on the WorkKeys<sup>®</sup> subassessments, these differences were small and somewhat negligible.

Although no statistically significant differences were found between the time when the education was completed (before first incarceration or after incarceration), participants who had completed their education prior to their first incarceration tended to have slightly higher scores on the three WorkKeys<sup>®</sup> subassessments. The interaction between group membership and time when education was completed (before first incarceration and after incarceration) on the WorkKeys<sup>®</sup> subassessment for reading for information provided support that members of the CERT group had higher mean scaled reading scores for both before first incarceration and after incarceration than the MSI group. The mean scaled scores for reading obtained by members of the CERT group also were stable, while members of the MSI group who completed their education in the prison system had lower scores than members of the MSI group who had completed their education prior to their first incarceration. This difference could be a reflection on the quality of educational programs that are provided to inmates in the prison system or the

prisoners' attitudes toward education. The prisoners in Michigan typically are transferred many times during their periods of incarceration, leading to disruptions in their education that could have contributed to their poor performance on the WorkKeys<sup>®</sup> subassessments.

**Research Question 3.** Can specific demographic and criminogenic variables of a prisoner in the CERT and MSI programs be used to predict scaled scores attained on the three WorkKeys<sup>®</sup> subassessments?

Stepwise multiple linear regression analysis was used to determine if demographic variables (age [at the time the data was gathered for the study], gender, race [African American, Caucasian, or Mexican], and educational level) and criminogenic variables (time served, number of convictions, and criminality index) could be used to predict scaled scores for the three WorkKeys<sup>®</sup> subassessments (applied mathematics, locating information, and reading for information). Categorical variables were dummy coded, with one category in each set excluded from the stepwise multiple linear regression analysis. For example, gender was dummy coded with females considered as the excluded variable and not included as a variable in the stepwise multiple linear regression analysis. Race was dummy coded into two variables (African American, Caucasian). The Mexican variable was not included in the analysis because in dummy coding one of the categorical variables is excluded from analysis. Education level was dummy coded into five variables (some high school, GED, high school graduate, some college, and college degree). The variable having 8th grade or less was not included as a variable in the stepwise multiple linear regression analysis.

Stepwise multiple linear regression analysis is used to determine the regression equation that accounts for the maximum amount of variance in the dependent variable by entering the independent variables one at a time, ordered by the amount of variance ( $\Delta r^2$ ) explained (Vogt &

Johnson, 2011). The variable entry ends when the “best” equation has been developed. This form of variable entry in multiple linear regression analysis is used when existing research is insufficient to specify theoretically the order in which the independent variables should be entered is not available. Table 23 presents the results of the stepwise multiple linear regression analysis for the WorkKeys<sup>®</sup> subassessment, applied mathematics.

Table 23

*Stepwise Multiple Linear Regression Analysis – Applied Mathematics*

Predictors	Constant	b-Weight	β-Weight	Δr <sup>2</sup>	T	Sig
<u>Included Variables</u>						
Caucasian	76.41	3.54	.42	.21	6.91	<.001
Time served in years		-.08	-.17	.03	-2.84	.005
Some college education		2.84	.16	.03	2.75	.006
<u>Excluded Variables</u>						
Age current			-.06		-.60	.552
Male			.04		.68	.495
African American			-.17		-.40	.692
Some high school education			-.09		-1.44	.152
GED			.01		.12	.904
High school education			.10		1.62	.107
College degree			.08		1.41	.160
Number of convictions			.07		1.07	.286
Criminality Index			.04		.68	.498
Group (MSI/CERT)			-.08		-1.10	.274
Multiple R		.52				
Multiple R <sup>2</sup>		.27				
F Ratio		25.02				
DF		3, 208				
Sig		<.001				

Three predictor variables, Caucasian, time served in years, and having some college, entered the stepwise multiple linear regression equation, accounting for a total of 27% of the variance in scaled scores for the applied mathematics subassessment on the WorkKeys<sup>®</sup>,  $F(3, 208) = 25.02, p < .001$ . Being Caucasian entered the stepwise multiple linear regression equation

first, accounting for 21% of the variance in applied mathematics,  $\beta = .42$ ,  $t = 6.91$ ,  $p < .001$ . The time served in years entered next, accounting for an additional 3% of the variance in applied mathematics,  $\beta = -.17$ ,  $t = -2.84$ ,  $p = .005$ . Being incarcerated for a shorter period was associated with higher scaled scores on this subassessment of the WorkKeys<sup>®</sup>. An additional 3% of the variance in applied mathematics was explained by “some college education”,  $\beta = .16$ ,  $t = 2.75$ ,  $p = .006$ . The positive relationship between having some college and scaled scores for applied mathematics provided support that inmates who had completed some college tended to score better on applied mathematics. The remainder of the independent variables did not enter the stepwise multiple linear regression equation, indicating they were not statistically significant predictors of scaled scores for applied mathematics subassessment on the WorkKeys<sup>®</sup> assessment. If a prisoner was Caucasian, had spent fewer years incarcerated, and had completed some college, he/she was more likely to achieve higher scores on the WorkKeys<sup>®</sup> subassessment for applied mathematics. The achievement levels for applied mathematics were not associated with being male or African American, time served in years, number of convictions, or types of convictions.

The second stepwise multiple linear regression analysis used the scaled scores for the locating information subassessment on the WorkKeys<sup>®</sup> assessment as the dependent variable. Table 24 presents results of this analysis.

Table 24

*Stepwise Multiple Linear Regression Analysis – Locating Information*

Predictors	Constant	b-Weight	$\beta$ -Weight	$\Delta r^2$	T	Sig
<u>Included Variables</u>						
Caucasian	78.48	2.43	.37	.14	6.26	<.001
Age (current)		-.10	-.33	.10	-5.52	<.001
College degree		4.42	.16	.02	2.66	.009
Some college education		1.85	.14	.02	2.28	.023
<u>Excluded Variables</u>						
Male			-.01		-.13	.894
African American			.22		.52	.602
Some high school			-.04		-.72	.473
GED			-.01		-.13	.895
High school education			.11		1.76	.080
Number of convictions			.03		.44	.660
Time served in years			-.04		-.40	.693
Criminality Index			.03		.47	.641
Group (MSI/CERT)			.01		.07	.944
Multiple R		.53				
Multiple R <sup>2</sup>		.28				
F Ratio		20.21				
DF		4, 207				
Sig		<.001				

Four independent variables entered the stepwise multiple linear regression equation, accounting for 28% of the variance in the locating information subassessment on the WorkKeys<sup>®</sup> assessment,  $F(4, 207) = 20.21, p < .001$ . Being Caucasian entered first, explaining 14% of the variance in the locating information subassessment,  $\beta = .37, t = 6.16, p < .001$ . An additional 10% of the variance in locating information was accounted for by the current age of the participants,  $\beta = -.33, t = -5.52, p < .001$ . The negative relationship between current age and scaled scores for the locating information subassessment provided support that younger prisoners were more likely to have higher scores on this subassessment of the WorkKeys<sup>®</sup> assessment. Having a college degree entered the stepwise multiple linear regression equation, explaining an additional 2% of the variance in the locating information subassessment on the WorkKeys<sup>®</sup>

assessment,  $\beta = .16$ ,  $t = 2.66$ ,  $p = .009$ . Prisoners who had completed a college degree were more likely to score higher on the locating information subassessment on the WorkKeys<sup>®</sup> assessment. Completing some college entered the stepwise multiple linear regression equation, explaining 2% of the variance in the locating information subassessment,  $\beta = .14$ ,  $t = 2.28$ ,  $p = .023$ . The positive relationship between scaled scores on the locating information subassessment and having completed some college provided support that prisoners with higher educational levels tended to have higher scaled scores on the subassessment, locating information. The remaining independent variables did not enter the stepwise multiple linear regression equation, indicating they were not statistically significant predictors of scaled scores on the locating information subassessment of the WorkKeys<sup>®</sup> assessment. If a prisoner was Caucasian, younger, and had some college or had completed a college degree, he/she was more likely to achieve higher scores on the WorkKeys<sup>®</sup> subassessment for locating information. The achievement levels for locating information did not appear to be associated with being male or African American, time served in years, number of convictions, criminality index, or group membership.

The scaled scores for the WorkKeys<sup>®</sup> subassessment, reading for information, were used as the dependent variable in a stepwise multiple linear regression analysis. The personal and criminogenic characteristics of the participants were used as the independent variables in this analysis. The results of this analysis are presented in Table 25.

Table 25

*Stepwise Multiple Linear Regression Analysis – Reading for Information*

Predictors	Constant	b-Weight	$\beta$ -Weight	$\Delta r^2$	T	Sig
<u>Included Variables</u>						
Caucasian	80.74	1.74	.28	.08	4.37	<.001
Age (current)		-.06	-.23	.04	-3.58	<.001
Some college education		2.28	.18	.03	2.78	.006
College degree		4.03	.15	.02	2.39	.018
<u>Excluded Variables</u>						
Male			.05		.73	.469
African American			-.09		-.20	.844
Some high school education			-.03		-.44	.659
GED			.03		.51	.608
High school education			.09		1.36	.175
Number of convictions			.10		1.52	.130
Time served in years			-.05		-.46	.649
Criminality index			.07		1.15	.252
Group (MSI/CERT)			-.10		-.98	.326
Multiple R		.42				
Multiple R <sup>2</sup>		.17				
F Ratio		11.30				
DF		4, 207				
Sig		<.001				

Seventeen percent of the variance in the WorkKeys<sup>®</sup> subassessment, reading for information, was explained by race, current age, having completed some college, and having a college degree,  $F(4, 207) = 11.30, p < .001$ . Being Caucasian entered the stepwise multiple linear regression equation first, explaining 8% of the variance in the subassessment, reading for information,  $\beta = .28, t = 4.37, p < .001$ . The current age of the prisoner entered the stepwise multiple linear regression equation, explaining an additional 4% of the variance in the subassessment, reading for information,  $\beta = -.23, t = -3.58, p = .001$ . The negative relationship between current age and scaled scores on the reading for information subassessment provided support that younger prisoners tended to have higher scaled scores on the reading for information subassessment. Having completed some college accounted for 3% of the variance in the reading

for information subassessment,  $\beta = .18$ ,  $t = 2.78$ ,  $p = .006$ . The positive relationship between scaled scores on the reading for information subassessment and having completed some college indicated that prisoners who had completed some college tended to have higher scaled scores for the WorkKeys<sup>®</sup> subassessment, reading for information. Having completed a college degree entered the stepwise multiple linear regression equation, accounting for an additional 2% of the variance in the reading for information subassessment,  $\beta = .15$ ,  $t = 2.39$ ,  $p = .018$ . Prisoners who had completed a college degree were more likely to have higher scores on the WorkKeys<sup>®</sup> subassessment, reading for information. The remaining independent variables did not enter the stepwise multiple linear regression equation, indicating they were not statistically significant predictors of scaled scores on the reading for information subassessment. If a prisoner was Caucasian, younger, had completed some college or had completed a college degree, he/she was more likely to achieve higher scores on the WorkKeys<sup>®</sup> subassessment for reading for information. The achievement levels for reading for information did not appear to be associated with being male or African American, marital status either before or after incarceration, time served in years, number of convictions, or types of convictions.

### **Ancillary Findings**

The percentage of inmate scores at each of the levels for the three WorkKeys<sup>®</sup> subassessments, applied mathematics, locating information, and reading for information were compared with ACT WorkKeys<sup>®</sup> national outcomes for adults with low educational levels (typically high school diploma/GED or less) from January 2006 through December 2011 (T. Kyte, Principal Research Associate, ACT Workforce Development Division, personal communication 12/27/2012) using chi-square tests for independence. Results of these analyses are presented in Table 26.



Table 26

*Chi-Square Tests for Independence – Comparison of WorkKeys® Subassessments – Inmate Results and National Outcomes (2006-2011)*

Level	<u>WorkKeys® Subassessments</u>					
	<u>Applied Mathematics*</u>		<u>Locating Information*</u>		<u>Reading for Information*</u>	
	Inmate	ACT	Inmate	ACT	Inmate	ACT
3	18	17	17	16	2	6
4	29	23	56	66	32	31
5	40	28	19	17	42	35
6	10	18	0	1	19	18
7	3	7	0	0	6	5
	$\chi^2 (4) = 6.48, p = .166$		$\chi^2 (3) = 1.63, p = .652$		$\chi^2 (4) = 2.59, p = .629$	

\*Percentages of scores at each level

The comparison of the inmates' outcomes on the three ACT WorkKeys® subassessments with the percentages of scores on national outcomes for individuals with low educational levels (high school/GED or less) provided no statistically significant differences. These findings provide support that prisoners are scoring at the same levels with people outside of the prison system who have similar levels of education.

### **Summary**

Chapter 4 has presented the results of the data analyses that were used to describe the sample and address the research questions posed for the study. Two Michigan Department of Corrections programs, CERT and MSI, were used in this study. A random sample of 212 prisoner records, 106 from each program, was used in the study. The records are maintained at a central location by the Michigan Department of Corrections. The study used only retrospective data from the prisoners' files. No additional data were collected that could require encounters

with the prisoners. All inmates in CERT had been selected by the Michigan Department of Corrections (MDOC) staff and were within seven years of release.

The prisoners in the CERT program had a mean age of 28.04 (sd = 4.11) years, while the prisoners in the MSI program had a mean age of 45.52 (sd = 9.52). The majority of prisoners were male, with 23 (21.7%) females in the CERT program sample and no women randomly selected from the MSI program sample. African Americans were underrepresented in the sample, with 42.9% of the prisoners of this ethnicity. The percent of people of color in the prison system in 2010 was 56.1% (Michigan Department of Corrections, 2012a). The largest group of prisoners had less than high school when they entered the prison system. The prisoners in the MSI program had been in prison longer ( $m = 16.22$ ,  $sd = 9.11$  years) than prisoners in the CERT program ( $m = 5.43$ ,  $sd = 3.24$  year). The prisoners in the MSI program also had more convictions and incarcerations than prisoners in the CERT program. The largest number of prisoners' scored at Level 4 or 5 level on a scale of 1-7 on each of the three WorkKeys<sup>®</sup> subassessments: applied mathematics, locating information, and reading for information.

Three research questions were addressed in the study. The first research question examined the relationship between the scaled scores on the three WorkKeys<sup>®</sup> subassessments, applied mathematics, locating information, and reading for information, and prisoner's level of education. Statistically significant correlations were found for applied mathematics and locating information for the CERT group, while all three subassessments were significantly related to the prisoners' levels of education for the MSI group. In examining differences between the two groups on the mean scores for the three subassessments, prisoners in the CERT group scored significantly higher than prisoners in the MSI group on all three subassessments.

The second research question examined differences in scores on the three WorkKeys<sup>®</sup> subassessments by group and time since completing their education. A statistically significant difference was found between the two groups on scores on the three WorkKeys<sup>®</sup> subassessments by time since they had received their high school diploma or GED (prior to first incarceration or after incarceration). While the differences between the groups were statistically significant for all three subassessments, no difference in their mean scores was found for the comparison between time since degree. There was a statistically significant interaction found between the time since degree and group for the reading for information subassessment.

The third research question asked whether or not demographic and criminogenic variables could be used to predict scaled scores on the three WorkKeys<sup>®</sup> subassessments. Three variables, Caucasian, time served in years, and having completed some college were statistically significant predictors of applied mathematics. The statistically significant predictors for locating information were Caucasian, age, college degree, and having completed some college. Reading for information had similar predictor variables as locating information, but with a slightly different order: Caucasian, age, having a college degree, and having completed some college.

Based on these findings, it appears that being Caucasian, younger, and having education beyond high school are significant predictors of prisoners' performance on the three WorkKeys<sup>®</sup> subassessments. When outcomes for the three subassessments were compared between prisoners in the study and national outcomes from 2006 through 2011 for individuals with low educational levels, the differences were not statistically significant. These findings indicate that prisoners in the CERT and MSI programs were scoring at the same levels as those in a national ACT sample. The conclusions and recommendations based on these findings can be found in Chapter 5.

## CHAPTER 5

### SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

#### Summary

The purpose of this empirical study was to investigate the association of demographic and criminogenic variables on scores of inmates in Michigan's Community and Employment Readiness Training Program (CERTS) and Michigan State Industries Program (MSI) on three WorkKeys® subassessments, applied mathematics, reading for information, and locating information. The study also discussed, but did not empirically examine, the potential education effect on recidivism.

Education was for the elite during the colonial times, but for a democratic society to survive, education had to expand beyond the elite. As the industrial revolution evolved, new job skills for the middle and lower class were created to meet the needs of society (Spalding, 1997). To improve job skills, a formal avenue of education was created to promote job and trade skills, reading, writing, and math skills for all citizens. For those who had not completed their primary education, their skills were improved through adult education. In the early 1880s, an adult education model was created that provided free instruction in practical knowledge and technological skills (Spalding, 1997). Adult education in Michigan began in the Upper Peninsula. By the 1930s, adult education was available in the Detroit area (Columbus, 1978).

Veterans coming home from duty during WWII had a hard time getting jobs because many did not have a high school education. The GED credential was initiated in 1942 by the United States Armed Forces Institute (USAFI) for veterans who had not graduated from high school to help them obtain the credentialing needed to obtain a job. Upon returning from military duty, veterans with a GED credentialing found it easier to pursue vocational, educational, or

personal goals. However, because high school graduation requirements changed over time, GED credentials may not be perceived as equivalent to the high school graduation requirements (Kane County Regional Office of Education, 2009). The GED received its last revision in 2002 with new subtests developed for math, social studies, science, reading, and writing skills.

Differences exist between educational attainment and employment (Song & Hsu, 2008). For individuals who have less than a high school degree, the GED graduates were employed at a higher rate. However, the person with a GED was less likely to be successful than the high school graduate due to character and personality. In comparing the hierarchy for employment success, the high school dropouts were at the bottom, followed by the GED recipient. High school graduates were found to have achieved the greatest success among noncollege graduates (Heckman et al., 2002).

During the 20<sup>th</sup> century, American prisons fluctuated philosophically between rehabilitation and punishment. Martinson's (1974) study that "Nothing Works" created turmoil in the discussion of prison education among scholars over the decades that followed. Martinson reported that post-secondary education had little effect on rehabilitative efforts and no significant impact on recidivism. Many scholars sided with Martinson (e.g., Anderson, 1981a; Jenkins & Steurer, 1995; Sullivan, 1990), while some opposed Martinson's findings (e.g., Ross & Fabiano 1985; Tewksbury & Taylor, 1996; VanNess & Strong, 1997; Welch, 1996).

After Martinson's findings and subsequent arguments about the positive effects of prison education, Michigan's prison system had decided to continue with prison education. The Michigan prison system provides prisoners with education that ranged from basic literacy skills to vocational training. Educational and vocational programs have helped prisoners to develop practical skills and respond to the idea that every person has the right to be educated. Research

has indicated that participation in prison-based education served to differentiate successful parolees from unsuccessful ones (Harer, 1994). However, other studies (Anderson, 1981a; Jenkins & Steurer, 1995; Martinson, 1974; Sullivan, 1990) that looked at recidivism pertaining to education did not include academic policy and social programs associated with correctional education. As a result, the study findings were mixed in regard to supporting the concept that education provided positive support to reduce offender recidivism. An 11-state study found that released prisoners with higher levels of education had lower recidivism rates. At the Huntsville Correctional Facility during 1999-2000, the recidivism rate was lower for released prisoners who were involved in a vocational education or GED program (Flanagan, 1994).

Inmates in Michigan prisons are assisted in developing functional literacy, employability, and career readiness skills. MDOC uses the ACT WorkKeys<sup>®</sup> subassessments to determine the level of work skills for each prisoner in their Michigan's Community and Employment Readiness Training (CERT) and Michigan State Industries (MSI) programs. WorkKeys<sup>®</sup> assesses gaps between inmates' current job-readiness skill levels and skills needed on the job. Based on the test results, inmates can receive training with work skills to enhance employment options on release.

No published literature was found comparing Michigan's inmates in the CERT program to inmates in the MSI with respect to demographic and criminogenic factors and levels attained on the ACT WorkKeys<sup>®</sup> subassessments. The findings of this study were used to fill the gap in the literature regarding the importance of continuing educational programs in prisons to reduce recidivism and increase employability of released prisoners.

## Methods

A nonexperimental, descriptive research design was used in this study. Retrospective data were obtained from the Michigan Department of Corrections (MDOC). Data were drawn on 212 inmates (106 from the CERT and 106 from the MSI programs) who had completed the three subassessments (applied mathematics, locating information, and reading for information) on the ACT WorkKeys<sup>®</sup> assessment. The demographic variables that were obtained from the MDOC included: age, gender, race, grade last attended, prisoner had a high school diploma/GED prior to first incarceration, obtained a GED while incarcerated, time between getting the high school diploma/GED and taking the ACT WorkKeys<sup>®</sup> subassessments, marital status prior to first incarceration and marital status at time of data collection. The criminogenic variables included length of time served in prison (in years), number of convictions, number of prison commitments, and types of crime. The researcher created a criminality index for the type of offenses committed by applying a weight relative to the degree of severity. Drugs received a weight of 1, other nonassaultive offenses were weighted with a 2, other assaultive received a weight of 3, with sex offenses given a weight of 4, and offenses involving death weighted with a 5. Higher scores indicated greater numbers of offenses or higher degree of severity of crimes. All data were provided by MDOC without any identifying information to provide anonymity to the prisoners whose records were included in the study.

## Findings

The prisoners in the CERT program ranged in age from 20 to 35 years, with inmates in the MSI program ranging from 24 to 70 years of age. The majority of the participants in each program were male, with 23 (21.7%) of the participants in the CERT program and none of the participants in the MSI program identified as female due to the random selection process or females not meeting the minimum score of Level 3 on the WorkKeys<sup>®</sup> subassessments. The largest group of participants in both programs was Caucasian, with 62 (58.5%) Caucasians in the CERT program and 58 (54.8%) Caucasians in the MSI program. Most of the participants in both programs were single, never married both at the time of their first arrest and at the time of the study. The largest group of participants ( $n = 35$ , 33.0%) in both the CERT and MSI programs had completed some high school. Twenty-seven (25.4%) participants in the CERT program and 23 (21.8%) in the MSI program had high school diplomas, while 23 (21.7%) in the CERT program and 31 (29.2%) in the MSI program had obtained GED certification. Three (2.8%) participants in the MSI program had college degrees.

The number of convictions for the CERT group ranged from 1 to 14. Prisoners in the MSI group had from 1 to 21 convictions. The number of prison commitments ranged from 1 to 3 for the CERT group and 1 to 7 for the MSI group. The mean number of years served in prison for the CERT group was 5.43 ( $sd = 3.24$ ) years. In contrast, the mean number of years served in prison for the MSI group was 16.22 ( $sd = 9.11$ ) years. The types of offenses that the participants in the CERT group were convicted of included, drugs, other nonassaultive, other assaultive, and involving death. Participants in the MSI group had been convicted of crimes including, drugs, nonassaultive, assaultive, sex offenses, and crimes involving death. The mean score for the criminality index for the CERT group was 7.53 ( $sd = 5.51$ ), with a range from 1 to 30. The MSI



group had a mean criminality index of 10.53 (sd = 7.32), with a range from 2 to 44. The difference in criminality index scores between the two groups was statistically significant, with the MSI group having significantly higher criminality index scores than prisoners in the CERT group.

### **Research Questions**

Three research questions were developed for the study. Each of these questions was addressed using inferential statistical analyses, with all decisions on the statistical significance of the findings made using a criterion alpha of .05.

***Research question 1.*** What is the relationship between the level of education of a prisoner and level attained on the three WorkKeys<sup>®</sup> subassessments? Does this relationship differ between prisoners in the CERT and prisoners in MSI?

Spearman rank order correlations were used to determine the strength and direction of the relationship between the scores on the three WorkKeys<sup>®</sup> subassessments and the level of education for prisoners in the CERT and MSI programs. Statistically significant correlations in a positive direction were obtained for applied mathematics and locating information for participants in the CERT program and for applied mathematics, locating information, and reading for information among participants in the MSI program. These results provided support that the level of education was related to outcomes on the three subassessments for the WorkKeys<sup>®</sup> assessment. The MSI group had stronger relationships between educational level and applied mathematics and reading for information WorkKeys<sup>®</sup> subassessments than the CERT group, with the CERT group having stronger relationships for the locating information WorkKeys<sup>®</sup> subassessments than the MSI group.

**Research question 2.** Is there a difference between CERT and MSI prisoners having a high school diploma or GED before their first incarceration or during incarceration and level attained on the three WorkKeys<sup>®</sup> subassessments?

A 2 x 2 multivariate analysis of covariance (MANCOVA) was used to determine if the scores on the three subassessments of the WorkKeys<sup>®</sup> assessments differed by group and time since degree (before first incarceration/after first incarceration). The educational level of prisoners prior to their first incarceration was used as the covariate in this analysis. A statistically significant difference was found for the main effect of group and the interaction effect of group x time since degree. The comparison by time since degree was not statistically significant. The participants in the CERT group had higher scores for applied mathematics, locating information, and reading for information than the MSI group. In testing the interaction effect, the participants who had completed their education before their first incarceration had higher scores than those who had finished their education after their first incarceration. Based on these findings, the CERT group had significantly higher scores on the three WorkKeys<sup>®</sup> subassessments than the MSI group.

**Research question 3.** Can specific demographic and criminogenic variables of a prisoner in the CERT and MSI programs be used to predict the level attained on the three WorkKeys<sup>®</sup> subassessments?

The demographic and criminogenic variables of the participants in the study were used as independent variables in a stepwise multiple linear regression analysis. The dependent variables in these analyses were the three subassessments on the WorkKeys<sup>®</sup> assessments. For the subassessment, applied mathematics, three independent variables, being Caucasian, time served

in years, and having completed some college, entered the stepwise multiple linear regression equation.

When locating information was used as the dependent variable, four independent variables, being Caucasian, age, having a college degree, and completing some college, entered the stepwise multiple linear regression equation. Prisoners who were Caucasian, younger, who had a college degree or completing some college, were more likely to score higher on the locating information subassessment.

The WorkKeys<sup>®</sup> subassessment, reading for information, was used as the dependent variable in a stepwise multiple linear regression analysis, with the same set of independent variables. Four independent variables, being Caucasian, age, having completed some college, and obtaining a college degree entered the stepwise multiple linear regression equation as statistically significant predictors of the subassessment, reading for information. Prisoners who were Caucasian, were younger, had completed some college, and had obtained a college degree were more likely to score higher on the subassessment, reading for information. The remaining demographic and criminogenic variables did not enter the three stepwise multiple linear regression equations, indicating they were not statistically significant predictors of the three subassessments of the WorkKeys<sup>®</sup> assessment.

One criminogenic variable, time served in years, was a statistically significant predictor of applied mathematics. Demographic variables that could be used to predict applied mathematics, locating information, and reading for information included completing some college education and being Caucasian. Age was a statistically significant predictor for locating information and reading for information. The remainder of the criminogenic and demographic variables could not be used to predict outcomes on the three WorkKeys<sup>®</sup> subassessments.

The prisoners' results on the three WorkKeys<sup>®</sup> subassessments were compared with the national adult outcomes from ACT. Although differences in the percentages of inmates scoring at the four levels were similar or higher for the three subassessments than that of nonincarcerated adults, the comparisons were not statistically significant.

### **Conclusions**

Prisoners in the MSI group had stronger correlations between the level of education and scores on the three subassessments of the WorkKeys<sup>®</sup> assessment than prisoners in the CERT group. The relationships between educational level and the WorkKeys<sup>®</sup> subassessments were generally low, but statistically significant, with the exception of the CERT group's correlation between reading for information subassessment and level of education. This finding was unexpected because prisoners in the MSI group generally were older and further away from their educational experiences than prisoners in the CERT group. The CERT group is comprised of prisoners who ranged in age from 20 to 35, with MSI participants' ages ranging from 24 to 70 years.

When comparing the level of education before first incarceration, the MSI participants and CERTS had similar levels of education of completing some high school. However, the number of prisoners in the MSI program with a GED certification or high school diploma before first incarceration exceeded the number of prisoners in the CERT program with a GED certification or high school diploma. The MSI group also had more participants reporting completion of a college degree than the CERT group. Since the MSI participants were older than the CERT participants, more inmates in the MSI program might have had more time and opportunities to complete their education before entering prison the first time.

Although the MSI participants had more education before first incarceration, the CERT participants scored higher on each of the WorkKeys<sup>®</sup> subassessments (applied mathematics, locating information, reading for information). One reason for this difference was the fact that the CERT participants had to have either a GED certification or possess a high school diploma as a prerequisite into the CERT program and might have been better prepared. This educational restriction was not placed on the participants in the MSI program. As the prisoners in the MSI group were older and had been in prison for longer times than prisoners in the CERT group, they also were further away from their educational experience when compared to the prisoners in the CERT group. This timing difference could have contributed to their scores as requirements for a high school diploma and GED certification have changed over the years. Prisoners in the CERT program might have had more experience with computers and new ways of searching for information, while those in the MSI program may have been taught using print sources (e.g., dictionary, encyclopedia, etc.) to obtain information.

The scaled scores on the three subassessments of the WorkKeys<sup>®</sup> assessments (applied mathematics, locating information, and reading for information) differed between prisoners in the two groups and the time their highest level of education was completed (prior to first incarceration or while in prison). A statistically significant interaction between group and time since completing their education was found for one WorkKeys<sup>®</sup> subassessment, reading for information. This interaction provided additional support that education prior to their first incarceration was important in scoring higher on reading for information. The effect sizes for each of the WorkKeys<sup>®</sup> subassessments were small, even though statistically significant, indicating the findings lacked practical significance. These findings provided additional support

for the importance of education in helping prisoners become prepared for work after incarceration.

Demographic variables (age at the time of the study, gender, race [African American, Caucasian, or Mexican], and educational level) and criminogenic variables (time served, number of convictions, and criminality index] were tested to determine if any could be used to predict scaled scores for the three WorkKeys® subassessments (applied mathematics, locating information, and reading for information). Using separate stepwise multiple linear regression analyses for each of the three subassessments of the WorkKeys® assessments, four independent variables, race, educational level, time served in years, and current age, were significant predictors for each analysis. Performance on each of the three subassessments, applied mathematics, locating information, and reading for information, was negatively related to the current age of the prisoner. Younger participants tended to score higher on each of the subassessments. The remaining independent variables did not enter into the stepwise multiple linear regression equation, meaning that they were not statistically significant predictors of scaled scores on the three WorkKeys® subassessments. These findings provided additional support that younger prisoners, prisoners who were Caucasian and prisoners who had completed some college or had a college degree tended to perform better on standardized tests of work skill readiness.

### **Recommendations for Practice**

The results of this study could provide important information on the value of education for prison inmates in the MSI and CERT program. Since the type of crime was not a significant factor on the scaled scores for the WorkKeys® subassessments (applied mathematics, locating information, and reading for information), there should be no restrictions on the types of crimes

placed on future CERT participants. Without this restriction, more prisoners could benefit from obtaining the WorkKeys<sup>®</sup> job skills assessment training to improve their chances of employability upon leaving prison. Although the Michigan Department of Corrections requires all incoming prisoners who have not completed a high school diploma or a GED certificate to participate in classes to obtain a GED, the study findings indicated that additional education is needed to update the workplace skills for prisoners' employability. Because of changes in the high school curriculum and the skills that the WorkKeys<sup>®</sup> subassessments measure, additional education to learn the new skills is needed prior to taking the subassessments. This additional education could provide older prisoners in the MSI program with skills similar to prisoners in the CERT program. Since the MSI participants have been away from their formal educational experiences compared to the CERTS participants, preparatory courses should be given to improve the WorkKeys<sup>®</sup> subassessment scores.

The study used 212 prisoner records in the study. The present prison population in Michigan is approximately 44,000. Many prisoners do not qualify for special programs (e.g., CERT or MSI) because they lack the necessary educational credentials, having a high school diploma/GED or failing to score at a level 3 on the three WorkKeys<sup>®</sup> subassessments. Prison officials need to help these inmates obtain the necessary education and work skills to assist them in becoming employed after leaving prison. A special program, "Turning a New Page," has been implemented in New Brunswick Canada to improve self-esteem and literacy and reduce recidivism among prisoners who were nonreaders (Taylor and McAtee, 2003). Prisoners in the State of Michigan could benefit from participation in this type of program.

### **Limitations of the Study**

The present study used data obtained from the Michigan Department of Corrections from inmates in the CERT and MSI programs. Some data were self-reported at time of entry into the prison system (i.e., marital status, educational level, employment, etc.). These data may not have been verified by the MDOC. This study compared only prisoners currently in CERT and the MSI programs. No data were obtained regarding former prisoners who had been in these programs and have either been gainfully employed since release or had been returned to prison. Prisoners had to obtain at least a Level 3 on each subassessment to be considered for the CERT or MSI program, therefore, the researcher did not study the training of those not in the two programs.

The researcher did not have control over the selection of participants in the MSI and CERT programs. The researcher provided the Michigan Department of Corrections with the inclusionary criteria (participant had to be over 18 years of age, had to be in either the CERT or MSI program, had to have attained at least a Level 3 on the three subassessments of the WorkKeys<sup>®</sup> assessment, and had to be within seven years of release for the CERT program). The records are maintained at a central location by the Michigan Department of Corrections. The study used only retrospective data from the prisoners' files. No additional data were collected that could require encounters with the prisoners. The inmates in CERT and MSI programs who were included in the sample had been selected randomly by the Michigan Department of Corrections (MDOC) staff.

### **Recommendations for Further Study**

Additional research is needed to determine if scoring above a level 3 on the WorkKeys<sup>®</sup> subassessments has an effect on employment after an inmate leaves the prison system. Some



suggestions for further research include conducting a follow-up study of inmates who have left the prison after participating in the CERT and MSI programs to determine if their employment rates are similar or different to people who have not been in prison or released prisoners who did not participate in the CERT or MSI programs. The present study should be replicated to include variables related to the effects of alcohol and drug addiction on the WorkKeys<sup>®</sup> subassessments.

Since the literature review suggests lower recidivism rates for education program participants (Harer, 1994) and Jenkins, Pendry, and Steurer (1993) suggested that educational intervention and the higher the level of educational attainment while incarcerated, the more likely the releasee was to have obtained employment upon release, a longitudinal research design should be used to follow released inmates in the CERT and MSI programs to investigate the effects of participation in these programs on their career paths and recidivism rates.

Further study needs to examine test results of all inmates who completed the ACT WorkKeys<sup>®</sup> subassessments to determine the disposition of those inmates whose scores were not sufficient to qualify for either the CERT or MSI programs. A purposive sampling strategy should be used to obtain a more equivalent sample of male and female inmates to compare background and criminogenic variables and their relationship to scores on the WorkKeys<sup>®</sup> subassessments.

Lynch and Sabol (2001) found that improved outcomes, including reduced recidivism came from those prisoners participating in prison education, job training, and placement programs. This research did not study those participants in the Career and Technical Education (CTE) programs in the Michigan Department of Corrections. Once the prisoners in the CTE programs are given the WorkKeys<sup>®</sup> subassessments, a comparative study can be done between the CERT, MSI and CTE participants using the WorkKeys<sup>®</sup> subassessments. Then a longitudinal study of these released prisoners and those who did not participate in any of the

programs for job placement and recidivism could be conducted to determine differences in prisoner outcomes following release from the prison system.

## APPENDIX A

## WORKKEYS® SCORES NEEDED BY JOB TITLE

<b>Job Title</b>	<b>Applied Mathematics</b>	<b>Locating Information</b>	<b>Reading for Information</b>
Adjustment Clerks	4	4	4
Administrative Services Managers	4	4	4
Agricultural Crop Farm Managers	5	5	4
Aircraft Body and Bonded Structure Repairers	5	5	5
Automotive Body and Related Repairers	3	3	3
Automotive Master Mechanics	4	4	4
Automotive Specialty Technicians	4	4	4
Bakers, Manufacturing	4	5	3
Barbers	3	3	3
Bench Workers, Jewelry	3	4	3
Bicycle Repairers	4	4	4
Bill and Account Collectors	4	4	3
Billing, Cost, and Rate Clerks	4	4	4
Boat Builders and Shipwrights	3	4	3
Boilermakers	4	4	3
Bookbinders	3	3	3
Cabinetmakers and Bench Carpenters	3	4	3
Calibration and Instrumentation Technicians	5	5	5
Carpenter Assemblers and Repairers	3	4	4
Cashiers	3	4	3
Cementing and Gluing Machine Operators and Tenders	3	4	3
Cleaning, Washing, and Metal Pickling Equipment Operators and Tenders	3	3	4
Coating, Painting, and Spraying Machine Operators and Tenders	3	4	4
Combination Machine Tool Setters and Set-Up Operators, Metal and Plastic	3	4	4
Combined Food Preparation and Serving Workers, Including Fast Food	3	4	3
Computer Operators	3	4	4

<b>Job Title</b>	<b>Applied Mathematics</b>	<b>Locating Information</b>	<b>Reading for Information</b>
Computer Programmers	5	5	5
Computer Software Engineers, Systems Software	6	5	5
Computer Specialists, All Other	5	4	4
Electrical and Electronic Equipment Assemblers	3	4	3
Electrical and Electronic Inspectors and Testers	5	4	4
Electrical and Electronics Repairers, Commercial and Industrial Equipment	4	5	5
Extruding, Forming, Pressing, and Compacting Machine Setters and Set-Up Operators	3	4	4
Farm Equipment Mechanics	3	4	3
Floral Designers	3	4	3
Furniture Finishers	3	3	3
General Farm workers	3	3	3
Helpers—Electricians	3	3	3
Helpers—Installation, Maintenance, and Repair Workers	4	4	4
Highway Maintenance Workers	3	4	4
Industrial Machinery Mechanics	4	4	4
Insulation Workers, Mechanical	4	5	4
Landscaping and Grounds keeping Workers	3	4	4
Lathe and Turning Machine Tool Setters, Operators, and Tenders Metal and Plastic	3	4	3
Mail Machine Operators, Preparation and Handling	3	3	3
Maintenance and Repair Workers, General	3	4	4
Maintenance Workers, Machinery	3	4	3
Order Clerks	3	4	4
Order Fillers, Wholesale and Retail Sales	3	4	4
Packaging and Filling Machine Operators and Tenders	3	4	4
Packers and Packagers, Hand	3	4	3
Pipe Fitters	4	4	4
Plant and System Operators, All Other	3	3	3

American College Testing, 2011b: For a complete list: <http://www.act.org/workkeys/skillsearch.html?q=A>

**APPENDIX B****EXAMPLES OF THE VARIOUS LEVELS OF WORKKEYS® SUBASSESSMENTS****Applied Mathematics**

- Number of questions 33
- Test Length 55 Minutes (WorkKeys® Internet Version)  
45 Minutes (Paper-and-pencil)  
55 Minutes (Spanish)

The *Applied Mathematics* test is one of three WorkKeys® assessments used with the National Career Readiness Certificate (NCRC) program. This assessment measures the skill people use when they apply mathematical reasoning, critical thinking, and problem-solving techniques to work-related problems. The test questions require the examinee to set up and solve the types of problems and do the types of calculations that actually occur in the workplace.

This test is designed to be taken with a calculator. A formula sheet that includes all formulas required for the assessment is provided. While individuals may use calculators and conversion tables to help with the problems, they still need to use math skills to think them through.

**Level 3 Applied Mathematics Sample Item**

In your job as a cashier, a customer gives you a \$20 bill to pay for a can of coffee that costs \$3.84. How much change should you give back?

- A. \$15.26
- B. \$16.16
- C. \$16.26
- D. \$16.84
- E. \$17.16

Why this is a Level 3 item:

- Examinees must perform a single subtraction operation.
- Numbers are presented in the logical order ( $\$20 - \$3.84$ ).
- Number of dollars must be converted to a decimal (dollars and cents: \$20.00).

**Level 4 Applied Mathematics Sample Item**

Over the last 5 days, you made the following numbers of sales calls: 8, 7, 9, 5, and 7. On the average, how many calls did you make each day?

- A. 5.8
- B. 7.0
- C. 7.2
- D. 9.0
- E. 36.0

Why this is a Level 4 item:

- There is more than one step of logic and calculation.
- Examinees must divide using positive numbers.
- Examinees must figure out averages.

**Level 5 Applied Mathematics Sample Item**

Quik Call charges 18¢ per minute for long-distance calls. Econo Phone totals your phone usage each month and rounds the number of minutes up to the nearest 15 minutes. It then charges \$7.90 per hour of phone usage, dividing this charge into 15-minute segments if you used less than a full hour. If your office makes 5 hours 3 minutes worth of calls this month using the company with the lower price, how much will these calls cost?

- A. \$39.50
- B. \$41.48
- C. \$41.87
- D. \$54.00
- E. \$54.54

Why this is a Level 5 item:

- There are several steps of logic and calculation.
- Examinees must perform calculations using mixed numbers.
- Examinees must compare their answers with two sets of calculations and choose the “best deal.”

**Level 6 Applied Mathematics Sample Item**

You are preparing to tile the floor of a rectangular room that is  $15\frac{1}{2}$  feet by  $18\frac{1}{2}$  feet in size. The tiles you plan to use are square, measuring 12 inches on each side, and are sold in boxes that contain enough tile to cover 25 square feet. How many boxes of tiles must you order to complete the job?

- A. 11
- B. 12
- C. 34
- D. 59
- E. 287

Why this is a Level 6 item:

- Examinees must do multiple steps of logic, calculations, or conversion.
- Examinees must use mixed numbers.
- Examinees must eliminate unnecessary information.
- Examinees must find the area of a basic shape and use the result in further calculations.

**Level 7 Applied Mathematics Sample Item**

The farm where you just started working has a vertical cylindrical oil tank that is 2.5 feet across on the inside. The depth of the oil in the tank is 2 feet. If 1 cubic foot of space holds 7.48 gallons, about how many gallons of oil are left in the tank?

- A. 37
- B. 59
- C. 73
- D. 230
- E. 294

Why this is a Level 7 item:

- There are multiple steps of calculation.
- Examinees must look up and use the formula for the volume of a cylinder.
- Examinees must convert from cubic feet to gallons.

## Reading for Information

- Number of Items 33
- Test Length 55 minutes (WorkKeys® Internet Version)  
45 minutes (Paper-and-pencil)  
55 minutes (Spanish)

The *Reading for Information* test is one of three WorkKeys® assessments used with the National Career Readiness Certificate. It measures the skill people use when they read and use written text in order to do a job. The written texts include memos, letters, directions, signs, notices, bulletins, policies, and regulations. It is often the case that workplace communications are not necessarily well-written or targeted to the appropriate audience. *Reading for Information* materials do not include information that is presented graphically, such as in charts, forms, or blueprints.

### Level 3 Reading for Information Sample Item

#### ATTENTION CASHIERS:

All store employees will now get 20% off the price of clothes they buy here. Please follow the new directions listed below.

#### Selling clothes to employees

- Ask to see the employee's store identification card.
- Enter the employee's department code number into the cash register.
- Use the cash register to take 20% off the price. Then push the sales tax button.
- Write your initials on the sales receipt.
- Sell clothes to employees during store hours only.

#### Accepting clothing returns from employees

- Employees receive a store credit certificate for clothes they return to the store.
- Store credit certificates are next to the gift certificates.
- Employees may not get a cash refund for clothes they return to the store.

You are a cashier. According to the notice shown, what should you write on a store employee's receipt?

- A. The employee's identification number
- B. The employee's department number
- C. The amount of sales tax
- D. The 20% discount price
- E. Your initials



Why this is a Level 3 sample item:

- The sentences are simple and direct. Most put the subject first and the verb second.
- There are short paragraphs and short sentences.
- There are direct instructions for simple tasks.
- The vocabulary includes common everyday words.
- Individuals have to pick out a clearly stated detail. They do not need to draw any conclusions.

**Level 4 Reading for Information Sample Item**

INSTRUCTIONS TO SORTING DEPARTMENT:  
SPECIAL PROJECT TO FIX ORDER #888

Five long, blue plastic bins have been placed over by the overhead door. Piled on the other side of this room, near the time clock, are several thousand steel rods of varying lengths. All of those rods must be sorted by length and placed in the bins.

Bin “1” is for rods that are four to five meters long.

Bin “2” is for rods that have a length of over five meters, up to six meters.

Bin “3” is for rods that have a length of over six meters, up to eight meters.

Bin “4” is for rods that have a length of over eight meters, up to ten meters.

Bin “5” is for warped or unsmoothed rods. These will not be accepted.

If these rods are not all sorted correctly, the customer will reject the order. We cannot afford to let that happen again. Work as quickly as you can because Friday is the deadline for delivery of the order.

According to the instructions shown, what is a condition for project success other than delivery on time?

- All rods must be sorted by both length and diameter.
- Rods eleven meters long must be leaned against the overhead door.
- The customer does not want rods that are warped.
- The five-meter-long rods must go in Bin 2.
- The ten-meter-long rods must arrive at the customer in Bin 4.

Why this is a Level 4 item:

- Sentences are longer, although still straightforward.
- Sentence structure is varied, and some introductory phrases are used.
- There are a number of details.
- Individuals must choose what to do when changing conditions call for a different action.

### Level 5 Reading for Information Sample Item

Goldberg's Auto Parts is served by more than fifty different accounts, each with its own sales representative, company name, corporate address, and shipping address. As a shipping and receiving clerk at Goldberg's, you are required to return defective merchandise to the manufacturer.

Standard procedure for returning an item begins with your written request to the company for authorization. Always send the request to the corporate address, not to the shipping address. Unless the company file folder contains a form for this procedure, write a business letter to the manufacturer supplying the item's stock number, cost, and invoice number; the date it was received; and the reason for its return. The manufacturer's reply will include an authorization number from the sales representative, a sticker for you to place on the outside of the box to identify it as an authorized return, and a closing date for the company's acceptance of the returned item. If you do not attach the provided sticker, your returned box will be refused by the manufacturer as unauthorized, and you will need to obtain a new letter, authorization, sticker, and closing date. Always send a returned box to the shipping address, not to the company's corporate address. According to the policy shown, what should you do if you lose an authorization sticker?

- A. Send a request for a return authorization along with the rejected part directly to the manufacturer's shipping address.
- B. Send a request for return authorization along with the rejected part directly to the manufacturer's corporate address.
- C. Repeat the standard procedure to obtain a new letter, authorization, sticker, and closing date.
- D. Use a sticker from another company's folder.
- E. Send the rejected part to your sales representative.

Why this is a Level 5 item:

- Sentences are longer and more complex.
- The document contains many steps to be followed and details to be considered.
- The vocabulary includes some jargon and specialized terms.
- Instructions include conditionals.
- Individuals must apply straightforward instructions to a new situation that is similar to the one described in the material.

### Level 6 Reading for Information Sample Item



From: J. Kimura, Senior Vice President of Molten Metals, Inc.

To: All e-mail users at Molten Metals, Inc.

To permit our employees to communicate directly with one another as well as with vendors and customers, Molten Metals, Inc. provides a network of e-mail accounts. Access to e-mail is at the sole discretion of Molten Metals, Inc., and we will determine who is to be so empowered. Under President Duarte's leadership, all messages sent and received (even those intended as personal) are treated as business messages. Molten Metals, Inc. has the capability to and reserves the right to access, review, copy, and delete any messages sent, received, or stored on the company e-mail server. Molten Metals, Inc. will disclose these messages to any party (inside or outside the company) it deems appropriate. Employees should treat this server as a constantly reviewed, shared file stored in the system.

Due to the reduced human effort required to redistribute electronic information, a greater degree of caution must be exercised by employees transmitting MM, Inc. confidential information using company e-mail accounts. Confidential information belonging to MM, Inc. is important to our independence and should never be transmitted or forwarded to persons or companies not authorized to receive that information. Likewise, it should not be sent or forwarded to other employees inside the company who do not need to know that information.

MM, Inc. strongly discourages the storage of large numbers of e-mail messages for a number of reasons. First, because e-mail messages frequently contain company confidential information, it is good to limit the number of such messages to protect the company's information. Second, retention of messages fills up large amounts of storage space on the e-mail server and personal hard disks, and can slow down the performance of both the network and individual personal computers. Finally, in the event that the company needs to search the network server, backup tapes, or individual hard disks for genuinely important documents, the fewer documents it has to search through, the more economical the search will be. Therefore, employees are to delete as soon as possible any e-mail messages they send or receive.

Based on the memo shown, personal messages transmitted or received using Molten Metals, Inc., e-mail accounts will be:

- A. automatically deleted upon detection.
- B. avoided by server staff to save company time.
- C. forwarded to private, personal accounts.
- D. grounds for personnel action.
- E. treated no differently from other messages.

Why this is a Level 6 item:

- The material is taken from a regulatory document.
- The sentences are formal and complicated.
- The paragraphs and sentences are filled with details and information.
- Sentences are long and more varied.
- Less common meanings of words are used.
- Examinees must apply complicated instructions to new situations.

**Level 7 Reading for Information Sample Item**

March 17

We will begin use of the new guidelines on Capital Management this October with the onset of the new fiscal year (with the exception of the Alpha-Beta Division and our European subsidiaries as noted below). A Standing Committee on Capital Management has been formed to administer the policy. Research & Development will pilot the policy starting in May. Feedback from R & D will be considered by the Standing Committee.

As you know, the primary intention of the Capital Management Policy is to gain some control and discipline over what has been a somewhat arbitrary process of funding projects and new enterprises. Whereas in the past, any project could potentially go forward to the Executive Committee for consideration regardless of merit, we will now have a process of screening and rating based on funding category, amount, need, return, and volume.

Categories for funding requests will include Savings, Repair & Replacement, New Enterprises, Acquisitions, and Budget Appropriations. Due to the improved controls, and to streamline the process, authorization levels have been raised, providing that the funding request is aligned with the new policy. General Managers will now have authority to approve appropriations up to \$50,000; division managers, \$50,000 to \$100,000. The Capital Management Committee may approve appropriations up to \$500,000 and the Executive Committee will continue to provide approval for appropriations above that level.

Financial criteria will be the major consideration for Savings, New Enterprise, and Acquisition requests. Minimum projected rate of return will be 20%. New Enterprise and Acquisition requests must be projected to build company volume by at least 20,000 units or 10% of that division's current sales volume. In addition, to achieve funding, New Enterprise projects will be required to meet established Consumer Research targets for marketplace acceptance and reflect the most recent federal product safety guidelines. All criteria must be met regardless of amount and approval level. There may be rare circumstances where it is justified to deviate from these criteria, such as competitive threat, but any exception must be approved by the Board of Directors.

R & R and Budget Appropriations will be judged on need. A set of detailed scoring criteria has been created to rank projects on this basis. These criteria will be used for funding anything more than \$5 million that does not specifically generate a return, such as equipment replacement or construction of new office space.

Because Alpha-Beta is a recent acquisition, it will maintain its funding processes until its accounting systems have transitioned to the corporate system. Due to differences in the European business, a separate task force has been chartered to develop procedures for the European subsidiaries.

You are a manager in the New Enterprise Division preparing a budget request for \$1.5 million for a new project. Based on the notice shown, you must demonstrate in your request all of the following EXCEPT:

- A. a competitive threat to the company.
- B. acquiescence to governmental rules.
- C. a potential for an increase in companywide sales.
- D. data that show that the product will sell well.

E. the profitability to the company.

Why this is a Level 7 item:

- Sentences are longer, denser, and more complex.
- The document uses a complex writing style.
- The paragraphs and sentences are filled with details and information.
- Less common meanings of words are used.
- Individuals must apply the principles behind complicated instructions to new situations.

**Locating Information**

- Number of items           38
- Length of test            55 minutes (WorkKeys® Internet Version)  
45 minutes (Paper-and-pencil)  
55 minutes (Spanish)

The *Locating Information* test is one of three WorkKeys® assessments used with the National Career Readiness Certificate. It measures the skill people use when they work with workplace graphics. Examinees are asked to find information in a graphic or insert information into a graphic. They also must compare, summarize, and analyze information found in related graphics.

The skill people use when they locate, synthesize, and use information from workplace graphics such as charts, graphs, tables, forms, flowcharts, diagrams, floor plans, maps, and instrument gauges is a basic skill required in today's workforce.

**Level 3 Locating Information Sample Item**


You regularly check the pressure gauge on a large tank. According to the gauge shown, what is the current pressure (in PSI)?

- A. 30
- B. 35
- C. 40
- D. 45
- E. 10

Why this is a Level 3 item:

- The problem contains an elementary workplace graphic.
- Examinees find one piece of information.

### Level 4 Locating Information Sample Item

<b>75053</b>						
FRESH 'N' CLEAN		555-6301	4:16 PM 8/26			
1200 14TH ST						
MAPLETON, OH 45768						
						
PHONE	555-2261	DATE	8-29	CLERK'S INITIALS		
				SW		
PRINT NAME <b>EDNA THOMPSON</b>						
ADDRESS						
Fold	On Hangers	Starch	NO	LT	MED	HVY
	<b>X</b>	<b>X</b>		<b>X</b>		
Due	MON	TUE	WED	THUR	FRI	
	<b>X</b>					
<b>X</b>	TROUSER			TROUSER		
	SHIRT			SUIT		
	DRESS			SHIRT		
	BLOUSE			OVERCOAT		
	SKIRT			SWEATER		
	JACKET			DRESS		
				BLOUSE		
				SKIRT		
				JACKET		
				TIE		

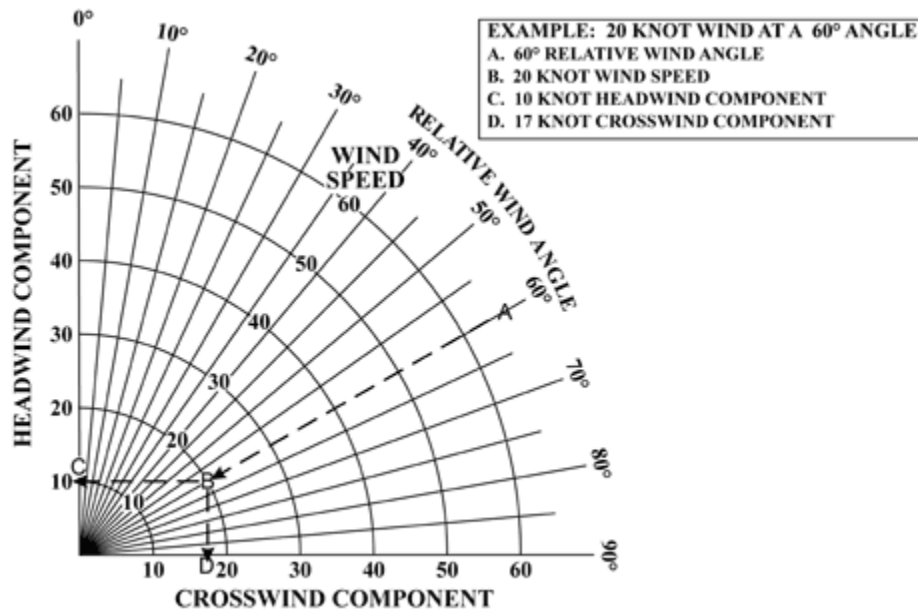
You must sort clothes in a dry cleaning establishment according to the customer's instructions. According to the form shown, how should this customer's shirt be treated?

- A. Dryclean it, add light starch, and fold it.
- B. Dryclean it, add light starch, and place it on a hanger.
- C. Launder it with no starch and place it on a hanger.
- D. Launder it with light starch and place it on a hanger.
- E. Launder it with medium starch and fold it.

Why this is a Level 4 item:

- The problem contains a straightforward graphic.
- Examinees must summarize information.

### Level 5 Locating Information Sample Item



As an airplane pilot, you need to determine the crosswind component of the wind speed to ensure safe takeoffs and landings. According to the graph shown, if the reported wind speed is 45 knots at a 20° angle, what is the crosswind component, in knots?

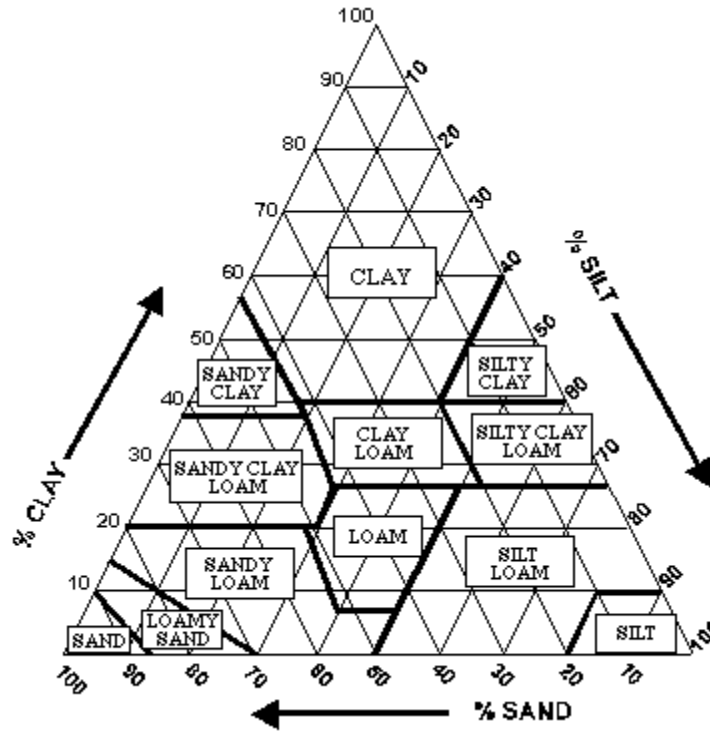
- A. 15
- B. 25
- C. 43
- D. 45
- E. 65

Why this is a Level 5 item:

- The problem uses a graph with a less common format.
- Examinees must sort through distracting information in a complicated graph using three scales.



**Level 6 Locating Information Sample Item**



Soil name	Texture class	Depth (inches)	Shrink-swell potential
Sarpy	sandy loam	0-7 7-60	low low to moderate
Kennebec	silt loam	0-38 38-60	moderate low to moderate
Colo	silty clay loam	0-31 31-60	high high
Blend	silty clay	0-17 17-29 29-60	high moderate to high high
Nevin	clay loam	0-28 28-48 48-60	moderate to high moderate moderate
Kenmoor	loamy sand	0-24 24-60	low high

You are a road contractor and you have analyzed a soil that you want to use for road fill. Your analysis shows that the soil contains 15% sand, 65% silt, and 20% clay. You need to know what the shrink-swell potential is for the soil because it will affect the durability of the road. Based on the diagram and table shown, what is the shrink-swell potential at a 30-inch depth for this soil?

- A. Low
- B. Low to moderate
- C. Moderate
- D. Moderate to high
- E. High

Why this is a Level 6 item:

- The problem is based on very complicated, detailed graphics in a challenging format.
- Examinees must notice the connections between graphics.
- Examinees must apply the information to a specific situation.
- Examinees must use the information to draw conclusions.

(American College Testing, 2011d)

## APPENDIX C

## WORKKEYS® SUMMARY REPORT

Official  
Skill Report

WorkKeys®

WorkKeys®  
Summary

Report for: RUSSELL CROSS  
Test Site: SAMPLE SCHOOL

Test Date: 04/2010  
Report Date: 06/25/2010

**Applied Mathematics** (Levels range from 3 to 7) Level: 7 Scale Score: 90

This person scored at Level 7. Individuals with Level 7 skills can set up and solve complex problems requiring extensive calculations and several conversions between systems of measurement. They can calculate percent change, set up and manipulate complex ratios and proportions, determine multiple areas or volumes of two- and three-dimensional shapes, determine the best economic value of several alternatives, and locate errors in multiple-step calculations. This is the highest level measured by this test.

**Reading for Information** (Levels range from 3 to 7) Level: <3 Scale Score: 72

This administration of the Reading for Information assessment did not result in a score of Level 3 or above for this individual.

We hope you find this WorkKeys information useful. If you have questions about these scores or about the WorkKeys system or skills, please contact WorkKeys (96), ACT, 2201 North Dodge Street, P. O. Box 168, Iowa City, IA 52243.

**LS=Level Scores:**

Use for selection, promotion, or other individual high-stakes purposes. For more information on Level Scores go to: <http://www.act.org/workkeys/pdf/forms/interp.pdf>

**SS=Scale Scores:**

Use to show growth over time and provide group comparisons in outcome measurement. Not intended for selection and hiring. Scale Score range: 50–90. For more information on Scale Scores go to: [http://www.act.org/workkeys/pdf/scale\\_score\\_interp\\_guide.pdf](http://www.act.org/workkeys/pdf/scale_score_interp_guide.pdf)

If you have completed three assessments, Applied Mathematics, Reading for Information and Locating Information, and received at least a level score of 3 for each test, you may qualify for a National Career Readiness Certificate. Go to [www.MyWorkKeys.com](http://www.MyWorkKeys.com) to access your scores. An individual can obtain a certificate, and share testing information with potential employers at this site.

ACT®

## APPENDIX D

### DESCRIPTION OF THE CORRECTIONAL FACILITIES FOR THE CERT PROGRAM

#### CERT Facilities

*Carson City East Correctional Facility (DRF)*, located in Carson City, Michigan consists of seven housing units; one Level I unit with 120 beds, three Level II units with 720 beds; two Level IV units with 384 beds, and a 22-bed temporary segregation unit. All units, except temporary segregation, are double bunked.

**Programming:** Academic programming is available to assist prisoners in preparing for GED completion. Prisoners who have already attained their GED also have the opportunity to obtain training in food technology. Routine work assignments are available to prisoners and Level I prisoners may work on public work assignments in the surrounding community under supervision of corrections staff.

Prisoners are provided on-site routine medical and dental care. Serious problems are treated at the department's Duane L. Waters Health Care in Jackson and emergencies are referred to a local hospital.

**Security:** The facility is surrounded by two fences with rolls of razor wire on the side and top of the outside fence. The fence area is also monitored by a series of electronic devices and the perimeter is patrolled by armed staff. Security was further enhanced in 1997 by the addition of two gun towers.

*Richard A. Handlon Correctional Facility (MTU)*, located in Ionia, Michigan, was named after the prison's first warden. The philosophy of MTU is that a prisoner who has completed the GED and learned a marketable skill has a much better chance of becoming a contributing member of society. The facility houses general population prisoners, along with other prisoners who have been placed in the Social Skills Developmental Unit (SSDU) and the Residential Treatment Program (RTP). The SSDU serves prisoners who are lacking skills necessary to live normal productive lives: some are considered developmentally disabled, many with long histories of institutionalization. The RTP is an integral component of the mental health continuum of care, which includes outpatient mental health teams, crisis stabilization programs, and inpatient hospital units.

**Programming:** The major program emphasis at the facility revolves around academic, vocational education, and special education. The facility houses the largest school system in the correctional system. The academic program is framed with the GED continuum, including Adult Basic Education and GED preparation. Supplements are Job Skills, Health Education and Independent Living Skills. Work socialization to assist prisoner workers in meeting community standards is an ongoing part of routine work

assignments.

Recreation and leisure time programming is offered to assist in team building skills. Religious services serving all recognized religious group are offered. Professional staff offer counseling in the areas of violence, sexual acting out and criminal thinking. The goal is to modify self-destructive behaviors and replace them with goal directed positive thought processes.

Prisoners are provided on-site routine medical and dental care. Emergencies can be referred to a local hospital, and more serious problems are treated at the department's Duane L. Waters Health Care in Jackson

**Security:** A double chain-links fence, concertina wire and electronic detection systems make up the perimeter security. An Emergency response vehicle also patrols the perimeter

*Women's Huron Valley Correctional Facility (WHV)*, located in Ypsilanti, Michigan, serves as the only prison in Michigan which houses females. The facility provides all reception center's processing which includes thirteen housing units for general population prisoners in level I, II, and IV, Residential Substance Abuse Treatment (RSAT), Residential Treatment Program (RTP), Acute Care, Infirmary and Detention. Women's Huron Valley services include personnel, prisoner records, business office, maintenance operations, warehouse operations and houses Correctional Mental Health Programs Administration.

**Programming:** Adult Basic Education and General Education Development preparation classes are offered, as well as pre-release and life skills instruction. Vocational training is offered in Auto Mechanics, Building Trades, Business Education Technology, Horticulture, Food Technology and Custodial Maintenance.

All facets of the Michigan Prisoner Re-Entry Initiative are offered on site. Programs are gender specific. Prisoners have access to religious programs, substance abuse treatment, psychological services, and general library and law library services. Prisoners are provided on-site routine medical and dental care. Pregnant prisoners receive counseling, parenting classes, and child care options. Medical emergencies are referred to local hospitals.

**Security:** The facility has two perimeter security fences with electronic detection systems. Security cameras are located throughout the facility and perimeter. Vehicles with armed personnel patrol the perimeter.

## APPENDIX E

### DESCRIPTION OF THE CORRECTIONAL FACILITIES FOR THE MSI PROGRAM

#### MSI Facilities

***Bellamy Creek Correctional Facility (IBC):*** located in Ionia, Michigan is a Level I, II, and IV correctional facility which include protective housing and administrative segregation for prisoners. Bellamy Creek Correctional Facility is the most recent facility built by the Michigan Department of Corrections. Prisoners serve institutional needs in areas such as food service, the library, recreational aides and maintenance workers.

**Programming:** Academic programs offer a range of educational opportunities including Adult Basic Education and General Education Development. Special education courses for prisoners with learning disabilities are also available. Vocational training is available in Custodial Maintenance Technology and Horticulture.

The prison also offers group counseling and religious services. For prisoners with mental health problems, psychiatrist, psychologists and social workers are available. An outpatient mental health team provides additional therapy. Referrals to outside medical facilities are made when necessary.

Other programs include Substance Abuse, Cage Your Rage, Violence Prevention Program, and a cognitive restructuring effort called Thinking for a Change.

Bellamy Creek is an In-Reach Facility for the Michigan Prisoner Re-Entry Effort (MPRI). These prisoners will be paroling to Kent, Allegan, Clinton, Eaton, and Ingham Counties.

**Security:** Bellamy Creek Correctional Facility's perimeter is surrounded by fences with razor-ribbon. It is also patrolled by armed staff and monitored by gun towers.

**Products and Services:** The MSI Shoe Factory Operations is located at the Bellamy Creek facility and manufactures all shoes for the MDOC prisoner population. Products include custom orthopedic shoes for prisoners with specific medical requirements, prisoner shoes and boots, oxfords, Ad-seg shoes, and new to the line-up are athletic shoes for prisoners with medical health care requirements.

The MSI Sign Shop Operations is located at the Bellamy Creek facility and produces aluminum reflective, plastic, wood reflective, and other high quality, high intensity signage and decals.

***Earnest C. Brooks Correctional Facility (LRF),*** located in Muskegon, Michigan, is adjacent to the Port City Industrial Park near Muskegon and sits on 76 acres.

Brooks and the West Shoreline Correctional Facility (formerly named the Muskegon Temporary Facility) were the first two prisons to begin a program of shared services. Positions that are shared with the West Shoreline Facility are warden and warden's staff, business manager, personnel officer, training staff, school principal, mail room staff, physical plant superintendent and warehouse manager.

Brooks is comprised of six housing units. Three are Level II and house up to 240 prisoners each. Two are Level IV and house up to 192 each. The sixth is Level I and houses up to 120 prisoners. Housing units are separated by additional internal fencing to prohibit prisoners of different security levels from mixing. Prisoners from different security levels are only mixed under limited, controlled situations. The facility also has a 22-bed segregation unit.

**Programming:** Academic programs include Special Education, Adult Basic Education and General Education Development completion. Vocational programs include food service and electronics. Michigan State Industries also operates a prison laundry and a notebook bindery.

Other programs include impulse control therapy, sex offender treatment, group counseling and substance-abuse treatment, religious and special activity groups and a library.

Prisoners are provided on-site routine medical and dental care. Serious problems are treated at the department's Duane L. Waters Health Center in Jackson. Emergencies can be referred to a local hospital.

**Security:** The facility includes two fences with rolls of razor wire on the side and top of the outside fence, along with a third outer perimeter chain link fence with razor wire and a low, property-line fence of medium gauge galvanized wire. The fences are monitored by a series of electronic security devices. The perimeter of the facility is constantly patrolled by armed staff. Two gun towers were added in 1997.

**Products and Services:** MSI employs Brooks Operations prisoners in manufacturing vinyl products and laundering clothing. The laundry operation washes approximately 5.8 million pounds of laundry per year. The Vinyl Factory Operations produces notebooks, engraving products, acrylic awards, and other miscellaneous specialty products to accommodate the needs of MSI customers.

**Carson City East Correctional Facility (DRF)**, located in Carson City, Michigan consists of seven housing units; one Level I unit with 120 beds, three Level II units with 720 beds; two Level IV units with 384 beds, and a 22-bed temporary segregation unit. All units, except temporary segregation, are double bunked.

**Programming:** Academic programming is available to assist prisoners in preparing for GED completion. Prisoners who have already attained their GED also have the opportunity to obtain training in food technology. Routine work assignments are

available to prisoners and Level I prisoners may work on public work assignments in the surrounding community under supervision of corrections staff.

Prisoners are provided on-site routine medical and dental care. Serious problems are treated at the department's Duane L. Waters Health Care in Jackson and emergencies are referred to a local hospital.

**Security:** The facility is surrounded by two fences with rolls of razor wire on the side and top of the outside fence. The fence area is also monitored by a series of electronic devices and the perimeter is patrolled by armed staff. Security was further enhanced in 1997 by the addition of two gun towers.

**Products and Services:** Carson City Operations employs prisoners in producing garments. This is MSI's largest garment factory. Primarily, prisoner garments (including, kitchen whites, aprons, pajamas, and thermal underwear) are just a few of the many textile garment items manufactured at the Carson City factory.

***Straits Correctional Facility (KTF) Consolidated with Chippewa August 9, 2009***, located in Kincheloe, Michigan with security Level II which houses males of all ages. The Straits Correctional Facility consists of eight separate housing units contained in four buildings. Each unit houses 140 prisoners for a total of 1120. The facility includes an administration building, health services unit, maintenance and warehouse, food service unit, a program/school building and a Michigan State Industries laundry and garment factory employing prisoners from the facility.

**Programming:** Programs include academic and vocational instruction, work assignments, general and law library services, group counseling, substance abuse treatment, hobby craft, recreational and religious programs, and cognitive behavior restructuring programming.

Prisoners are provided with on-site routine medical, dental and mental health care. Serious problems are treated at the department's Duane L. Waters Health Care in Jackson and emergencies are referred to a local hospital.

**Security:** The perimeter security includes double chain link fences, razor-ribbon wire, electronic detection systems and an armed patrol vehicle.

**Products and Services:** MSI Straits Correctional Operations prisoners provide laundry services to state and various non-profit organizations. The laundry operation washes approximately 5.2 million pounds of laundry per year.

***G. Robert Cotton Correctional Facility (JCF)***: located in Jackson, Michigan is a Level I, II, and IV correctional facility housing males all ages. The G. Robert Cotton Correctional



Facility sits on 114 acres and is located northwest of the intersection of Elm Road and I-94 in Jackson County.

The prison is a combination of pole barns, which have weatherized buildings, sealed concrete flooring and plaster-board walls, and other buildings that are brick, mortar, steel and glass.

**Programming:** Academic programming includes Adult Basic Education, General Education Development preparation, Special Education and several vocational training programs.

Routine medical and dental care is provided on site. Serious medical problems are treated at the department's Duane L. Waters Health Care.

**Security:** Security includes three 12-foot fences, rolls of razor-ribbon wire, two perimeter towers, an acoustic sensing system and an electronic detection system. A patrol road surrounds the perimeter of the facility, and a vehicle responds to all detection system alarms. Surveillance camera systems are located throughout the facility.

**Products and Services:** The G. Robert Cotton Operations employs prisoners in the manufacturing of mattresses, garments, and the MSI Print Shop recently moved its operations within this facility. The garment factory manufactures all winter coats for MDOC prisoners and other prisoner outerwear, while the mattress operation produces mattresses for local law enforcement agencies and prisons, as well as box spring, innerspring, foam core, and the pressure reduction foam core mattresses for hospitals, fire departments, schools and dorms.

MSI's Print and Graphic Services offer a wide range of quality printed products at very competitive prices!! From concept to finished product, our printing specialist can work with you to ensure that your ideas are turned into reality.

***Gus Harrison Correctional Facility (ARF) consolidated with Parr Highway Correctional Facility (ARF) in August 9, 2009:*** located in Adrian, Michigan is a Level I, II, and IV correctional facility for males of all ages. The Gus Harrison Correctional Facility was named after the department's first director. It is a multi-security prison on the eastern border of the city of Adrian. The facility consists of six housing units.

**Programming:** includes academic and vocational instruction, work assignments, general and law library services, psychological group counseling, substance-abuse treatment, horticulture and English as a second language. Prisoners are provided on-site routine medical and dental care. Serious problems are treated at the department's Duane L. Waters Health care in Jackson. Emergencies are referred to a local hospital.

**Security:** The Gus Harrison facility protects its perimeter with double chain-link fences, razor-ribbon wire, electronic detection systems, a patrol vehicle and two gun towers.

**Products and Services:** MSI employs prisoners at the Gus Harrison facility to produce license plates for the Michigan Department of State (Secretary of State). The License Plate Operation produces more than just plates!! They also produce a variety of fund-raising plates for school booster clubs, and non-profit organizations. Booster Plates and Booster Plate Clocks are very popular fund-raising products. The factory also produces City Plates, and other miscellaneous plates.

***Ionia Maximum Correctional Facility (ICF):*** located in Ionia, Michigan is a Level II and V correctional facility. The Ionia Maximum Facility is comprised of five Level V housing units and two Level II housing units. Two of the Level V housing units are designated Administrative Segregation, which includes Detention, Temporary Segregation and Secure Status Out-Patient Treatment cells, the remaining three are general population units. The Level V housing consist of five bi-level, double winged single cell units, consisting of day room area, showers, laundry room, staff offices and a fence-in activity and recreational yard for the security Level V prisoners. The Units designated Administrative Segregation affords prisoner outdoor recreation in single occupancy security exercise modules.

The Level II housing consists of a large pole-barn construction divided into two units with 140 beds in each unit. The units have shower, laundry, and recreation areas. The Level II prisoners have separate yard areas, with access to a weight pit, basketball courts, volleyball, baseball, horseshoes, and a running track. Jobs are available for all Level II prisoners, which includes a Michigan State Industries factory which employs Level II prisoners.

The Prisoner Services building contains classrooms, an auditorium, a gymnasium, a weight room, commissary (prison store) and a barbershop. A separate building contains food service, prisoner and staff dining, health care, prisoner property, and maintenance. The administrative building contains the institutions Control Center, Record Office, Business Office, visiting areas, staff training, and a disciplinary and parole board hearing room.

**Programming:** Academic programs include Adult Basic Education, Special Education, General Education Development (GED) completion and Post GED programs. In-cell study programs are available to prisoners who may not participate in group in group activities. Treatment services include Secure Status Out-Patient Treatment (SSOTP), Out-Patient Mental Health Treatment, Counseling, substance abuse programs, Assaultive Offenders psychotherapy and religious services. The facility also has on-site; legal and general libraries that are available to prisoners.

Prisoners are provided with excellent on-site routine medical and dental care. Serious emergency cases are treated at Ionia County Memorial Hospital and the Duane L. Waters Health Center in Jackson.

**Security:** Security consists of two 12 foot wire fences (which incorporate a Stun Fence), razor ribbon, gun towers, security surveillance cameras and a personal alarm system for staff throughout the facility. Enclosed officer's stations separate each wing within the Level V housing units. A patrol vehicle with armed personnel constantly patrols the prison perimeter.

**Products and Services:** The IMAX factory is gearing up to produce a variety of "Cut-n-Sew" garments. Projects will be posted as soon as they are underway!! Additional information will be provided once projects begin.

***Kinross Correctional Facility (KCF)***, located in Kincheloe, Michigan has a Level V perimeter is protected with a concrete wall, razor-ribbon wire, electronic detection systems, and eight gun towers. Level I is surrounded by two chain link fences and an electronic detection system.

This Level I and II security prison has the largest fenced area (113 acres currently enclosed) of any state prison in Michigan.

**Programming:** The education department offers both GED completion and a variety of vocational training. General Education Development preparation is offered to those without a verified high school diploma or GED. Career and technical training are available in auto mechanics, auto body repair, building trades, welding, custodial maintenance, business education technology, and horticulture. Testing for State certification in auto mechanics is offered. Training in employability skills is also available. Students are also involved in building homes for Habitat for Humanity. Other programs include: substance-abuse treatment, hobby craft, a music program and a master gardener program. The prison also has chapters of Vietnam Veterans of America, Jaycees, and several other prisoner organizations. Religious activities are coordinated through the institutional chaplain and include a wide range of active religions.

Psychological services staff are available to provide diagnostic assessment, group and individual psychotherapy and crisis intervention.

Prisoners are provided with on-site routine medical and dental care. Serious problems are treated at the department's Duane L. Waters Health Care in Jackson. Emergencies can be referred to a local hospital.

**Security:** The perimeter of the Kinross prison is composed of two perimeter chain-link fences monitored with electronic security devices and topped with razor-ribbon wire. The perimeter is patrolled by armed personnel.

**Products and Services:** The Kinross Operations employs prisoners in the production of garments. This is MSI's "Uniform Factory". It produces all civilian law enforcement and prisoner shirts. Data driven plotters make the patterns, and fabric is cut manually. The Kinross Operations also produces correctional and law enforcement coats, jackets, bibs, transportation, and maintenance wear.

**Marquette Branch Prison (MBP):** located in Marquette, Michigan is a Level I and V correctional facility housing males aged 21 and above. Marquette Branch Prison was authorized by the Michigan State Legislature in 1885. The prison was subsequently built on the shores of Lake Superior on property that was a gift to the State from the Marquette Businessmen's Association. The prison was completed in 1889 at a cost of less than \$200,000.

The Level V portion of the prison has three General Population housing units and three Administrative Segregation housing units. There are four Level I housing units that are located just outside the Level V portion of the facility.

**Programming:** Adult Basic Education and General Education Development completion are offered. Other programs include substance abuse treatment and religious services. Available activities include law library, general library and hobby craft. Many program resources are expanded through participation by community volunteers, such as local clergy and lay people, which gives prisoners increased opportunities to participate in programs.

Prisoners are provided with on-site routine medical and dental care. Serious problems are treated at the department's Duane L. Waters Health Care in Jackson. Emergencies can be referred to a local hospital.

**Security:** The Level V perimeter is protected with a concrete wall, razor-ribbon wire, electronic detection systems, and eight gun towers. Level I is surrounded by two chain link fences and an electronic detection system.

**Products and Services:** The Marquette Factory employs prisoners in the manufacturing of a variety of Cut-n-Sew garments and other items.

**Parnall Correctional Facility (SMT),** located in Adrian, Michigan, is a minimum-security prison that houses 1696 prisoners. Initially it was part of the former State Prison of Southern Michigan until its break up. SMT maintains 47 buildings, including 5 housing units setting on 45 acres.

**Programming:** The facility offers academic and vocational programming, as well as religious and self-improvement programs. SMT is an in-reach facility for the Michigan Prisoner Re-Entry Initiative (MPRI) for the Jackson region

Prisoners are provided on-site medical, dental and psychological treatment. More serious cases are treated at Duane L. Waters Hospital.

A variety of work assignments are offered within the facility; as well as jobs in the Michigan State Industries, including meat processing, creamery, textile, metal furniture, shoe factory, sign shop.

**Security:** The perimeter consists of two 16-foot chain link fences with razor-ribbon wires and electronic detection system.

**Products and Services:** The Parnall Operations employs prisoners in a variety of industries. Prisoners are employed in print, dairy, and meat processing.

An 11,000 square foot warehouse is also located at the Parnall Operations, and serves as the MSI Distribution Center. The MSI "Ready-to-Ship" program items are warehoused and shipped from this facility.

***Women's Huron Valley Correctional Facility (WHV):*** located in Ypsilanti, Michigan is a Level I, II, and IV level correctional facility housing females any age. The facility serves as the only prison in Michigan which houses females. The facility provides all reception center processing which includes thirteen housing units for general population prisoners in level I, II, and IV, Residential Substance Abuse Treatment (RSAT), Residential Treatment Program (RTP), Acute Care, Infirmary and Detention.

Women's Huron Valley services include personnel, prisoner records, business office, maintenance operations, warehouse operations and houses Correctional Mental Health Programs Administration.

**Programming:** Adult Basic Education and General Education Development preparation classes are offered, as well as pre-release and life skills instruction. Vocational training is offered in Auto Mechanics, Building Trades, Business Education Technology, Horticulture, Food Technology and Custodial Maintenance.

All facets of the Michigan Prisoner Re-Entry Initiative are offered on site. Programs are gender specific. Prisoners have access to religious programs, substance abuse treatment, psychological services, and general library and law library services.

Prisoners are provided on-site routine medical and dental care. Pregnant prisoners receive counseling, parenting classes, and child care options. Medical emergencies are referred to local hospitals.

**Security:** The facility has two perimeter security fences with electronic detection systems. Security cameras are located throughout the facility and perimeter. Vehicles with armed personnel patrol the perimeter.

**Products and Services:** The Parnall Operations employs prisoners in a variety of industries. Prisoners are employed in print, dairy, and meat processing.

An 11,000 square foot warehouse is also located at the Parnall Operations, and serves as the MSI Distribution Center. The MSI "Ready-to-Ship" program items are warehoused and shipped from this facility.

***Thumb Correctional Facility (TCF):*** located in Lapeer, Michigan is a Level II correctional facility housing males of all ages. The Thumb Correctional Facility has six Level II housing units including day showers, laundry facilities and staff offices. Four housing units are for adult offenders and two housing units are for youthful offenders. The segregation unit is equipped with stainless steel sinks and toilets, and slotted doors for feeding.

Other buildings include the prison services building, which have academic and vocational classrooms, libraries, a barber shop, a food service building for prisoner and staff dining, health care area, warehouse and maintenance areas. There is an administrative building for staff offices, records, visiting, staff training, hearings and the institution's control center. Michigan State Industries has a building where it provides industrial laundry services for state and other nonprofit agencies.

**Programming:** Prisoners can involve themselves in academic, vocational and religious programming. Prisoner work programs include the prison's laundry. Treatment programs include substance-abuse counseling, group therapy, clubs and organizations.

Prisoners are provided on-site medical and dental care; serious and emergency care is provided by the department's Duane L. Waters Health Care in Jackson.

**Security:** The perimeter security includes triple 12-foot fences with razor-ribbon wire, towers, electronic perimeter detection systems and a perimeter vehicle with armed personnel.

**Products and Services:** The Thumb Operations employs prisoners to launder clothing for State and various non-profit organizations. The laundry operation washes approximately 5.8 million pounds of laundry per year.

***Ryan Correctional Facility repurposed to the Detroit Reentry Center October 28, 2012:*** located in Detroit, Michigan. It is now under the jurisdiction of Field Operations Administration

(FOA). The Detroit Reentry Center is located on the east side of Detroit on 39 acres, off Ryan Road. The land was previously used by Daimler Chrysler AG to store automobiles.

**Programming:** Detroit Reentry Center houses parolees who are required, as a specific condition of their parole, to participate in and satisfactorily complete reentry programming, as well as parole violators who are believed to have violated a condition of parole and are being considered for parole revocation proceedings or other appropriate action. The center also houses a small population of prisoners.

The center provides residential reentry programs that parolees are required to satisfactorily complete prior to their release into the community. The center also offers recreational, social, and religious programs to both parolees and prisoners. About 200 community volunteers help staff in providing prisoners with faith-based programming. Health care is provided at the center, the Duane L. Waters Health Care in Jackson, or local hospitals in the event of emergencies.

**Security:** The Ryan Correctional Facility is protected by two 12-foot fences, electronic detection systems, razor-ribbon wire, gun towers and buffer fencing.

**Products and Services:** MSI employs prisoners at the Ryan Janitorial Operations in producing janitorial products. The Janitorial factory ships janitorial products typically in 7 to 14 business days to State and other non-profit agencies throughout the state. This factory supplies dispensing units to all MDOC facilities, and offers a maintenance service program.

(Michigan Department of Corrections, n.d.c)

**APPENDIX F****THE GED**

With the exception of Part II of the Language Arts: Writing Test, which requires an essay, all questions on the GED Tests are multiple choice with five possible answers given. The questions range in difficulty from easy to hard, and cover a wide range of subjects. The content of the test are as follows:

**Language Arts: Writing - Part I***(50 questions, 75 minutes)*

30% Sentence Structure

30% Usage

25% Mechanics

15% Organization

**Language Arts: Writing - Part II***(essay, 45 minutes)***Social Studies***(50 questions, 70 minutes)*

25% U.S. History

25% Civics &amp; Government

20% Economics

15% Geography

15% World History

**Science***(50 questions, 80 minutes)*

45% Life Science

35% Physical Science

20% Earth &amp; Space Science

**Language Arts: Reading***(40 questions, 65 minutes)*

75% Literacy Text

25% Nonfiction Prose

**Mathematics - Part I (Calculator)***(25 questions, 45 minutes)***Mathematics - Part II (No Calculator)***(25 questions, 45 minutes)*

20-30% Number, Number Sense &amp; Operations

20-30% Measurement &amp; Geometry

20-30% Data, Statistics &amp; Probability

20-30% Algebra, Functions &amp; Patterns

An applicant shall make a standard score of 410 or above on each of the five tests and a total standard score of at least 2,250 on the entire battery (average score 450 on all tests).

(GED Test Details, n.d.)

For more information: [http://michigan.gov/mdcd/0,4611,7-122-1680\\_2798\\_43725---,00.html](http://michigan.gov/mdcd/0,4611,7-122-1680_2798_43725---,00.html)



**APPENDIX G****LOCATIONS AND PRODUCTS MADE THROUGH  
MICHIGAN STATE INDUSTRIES (MSI)**

<b>Bellamy Creek</b>	Shoe Sign Shop
<b>Brooks</b>	Laundry Vinyl Products
<b>Carson City</b>	Garment
<b>Chippewa (Straits)</b>	Laundry
<b>Cotton</b>	Print Garment Mattresses
<b>Gus Harrison (Adrian)</b>	License Plates Optical Lab
<b>Ionia Maximum</b>	Textiles-Socks/Mops Garment
<b>Kinross</b>	Garment/Accessories
<b>Marquette</b>	Work Garment
<b>Parnall</b>	Dairy Processing Meat Processing
<b>Huron Valley</b>	Dental Lab Garment Laundry Bags
<b>Thumb</b>	Laundry
<b>Ryan</b>	Janitorial

(Michigan Department of Corrections, n.d.c)

## APPENDIX H

## LETTER FROM MICHIGAN DEPARTMENT OF CORRECTIONS



STATE OF MICHIGAN  
DEPARTMENT OF CORRECTIONS  
LANSING

RICK SNYDER  
GOVERNOR

DAN HEYNS  
DIRECTOR

August 19, 2011

Pamela S. Jackson

Re: Proposal to conduct research on WorkKeys® Assessment

Dear Ms. Jackson:

I am writing to certify that the Michigan Department of Corrections will be providing or otherwise making available the data needed for you to conduct your study entitled FACTORS THAT INFLUENCE WORKKEYS® ASSESSMENT SCORES OF INMATES IN MICHIGAN'S COMMUNITY AND EMPLOYMENT READINESS TRAINING PROGRAM AND MICHIGAN STATE INDUSTRIES PROGRAM. In order to receive the data, you will provide an Excel spreadsheet of needed data items and the Michigan Department of Corrections will provide the requested information on the spreadsheet. All information will be de-identified (i.e. nothing in the data files will allow either the researcher or anyone reviewing any resulting report to identify any study subject by name or any other identifier). Coupled with the data confidentiality agreement that was contained within the initial approval of the research, subject confidentiality will be rigidly maintained.

If you require any additional information or certifications to proceed, please feel free to contact me per the information below.

Sincerely,

*R. Douglas Kosinski*

Manager, Risk, Classification and Program Evaluation Section  
Office of Research and Planning  
Michigan Department of Corrections  
Office Telephone: (517) 373-3425  
E-mail: [KosinskiD@michigan.gov](mailto:KosinskiD@michigan.gov)

## APPENDIX I

## WAYNE STATE UNIVERSITY INSTITUTIONAL REVIEW BOARD APPROVAL

WAYNE STATE  
UNIVERSITY

IRB Administration Office  
87 East Canfield, Second Floor  
Detroit, Michigan 48201  
Phone: (313) 577-1628  
FAX: (313) 993-7122  
<http://irb.wayne.edu>

## CONCURRENCE OF EXEMPTION

To: Pamela Jackson  
College of Education

From: Dr. Scott Mills, *S. Mills PhD*  
Chairperson, Behavioral Institutional Review Board (B3)

Date: December 29, 2011

RE: IRB #: 116911B3X

Protocol Title: Factors That Influence Workkeys Assessment Scores of Inmates in Michigan's Community and Employment Readiness Training Program and Michigan State Industries Program

Sponsor:

Protocol #: 1112010386

The above-referenced protocol has been reviewed and found to qualify for Exemption according to paragraph #4 of the Department of Health and Human Services Code of Federal Regulations [45 CFR 46.101(b)].

- Protocol Summary Form (received in the IRB Office 11/30/2011)
- Protocol (received in the IRB Office 11/30/2011)
- A waiver of consent has been granted according to 45CFR 46.116(d) and justification provided by the Principal Investigator in the Protocol Summary Form. This waiver satisfies: 1) risk is no more than minimal, 2) the waiver does not adversely affect the rights and welfare of research participants, 3) the research could not be practically carried out without the waiver, and 4) Providing participants additional pertinent information after participation is not appropriate.

This proposal has not been evaluated for scientific merit, except to weigh the risk to the human subjects in relation to the potential benefits.

- Exempt protocols do not require annual review by the IRB.
- All changes or amendments to the above-referenced protocol require review and approval by the IRB **BEFORE** implementation.
- Adverse Reactions/Unexpected Events (AR/UE) must be submitted on the appropriate form within the timeframe specified in the IRB Administration Office Policy ([http://irb.wayne.edu/policies/human\\_research.php](http://irb.wayne.edu/policies/human_research.php)).

**NOTE:** Forms should be downloaded from the IRB Administration Office website <http://irb.wayne.edu> at each use.

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**ABSTRACT****FACTORS THAT ARE ASSOCIATED WITH WORKKEYS®  
ASSESSMENT SCORES OF INMATES IN MICHIGAN DEPARTMENT OF  
CORRECTION'S COMMUNITY AND EMPLOYMENT READINESS TRAINING  
PROGRAM AND MICHIGAN STATE INDUSTRIES PROGRAM**

by

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August 2013

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Inmates face challenges in obtaining employment once they leave prison because many are undereducated and lack work skills. This study examined demographic and criminogenic variables of inmates in Michigan Department of Correction's (MDOC) Community and Employment Readiness Training (CERT) and Michigan State Industries (MSI) programs that were associated with their scores obtained on the WorkKeys® assessment test. MDOC uses the WorkKeys® to assess the gaps between inmates' current job readiness skill level and skills needed for various types of jobs upon release. There is no published literature comparing MDOC's Community and Employment Readiness Training (CERT) and Michigan State Industries (MSI) programs and their WorkKeys® scores.

Unidentifiable data were collected from records provided by the Michigan Department of Corrections from inmates in the CERT and MSI programs, with 106 participants from each program. Demographic and criminogenic information was collected for this research as well as test scores attained on the WorkKeys® assessments by the participants in the CERTS and MSI programs comparing which variables were associated with scores on three of the WorkKeys®

assessments in: Applied Mathematics, Reading for Information and Locating Information. Statistical analyses for this research study included factorial multivariate analyses, and stepwise multiple linear regressions were used to assess relationships among the demographic and criminogenic variables and their associations on the WorkKeys®.

Findings for research question 1 indicated that the number of years of formal education was related to outcomes on subassessments for the WorkKeys® assessment. For research question 2, participants in the CERT group had higher scores for applied mathematics, locating information, and reading for information than participants in the MSI group. Participants who completed their education before their first incarceration scored higher on each subassessment than those who completed their education while incarcerated. When looking at variables on research question 3 that could be associated with the WorkKeys® assessment scores, being White, younger, and level of education were the only variables that were significant.

Results from this study could provide administrators, educators, and legislators important information to develop programs and curriculum to better assess and train prisoners for employment after they have completed their sentences.

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