

# Literacy, Learning Disabilities and Their Association With Imprisonment

By Lucy Barnard-Brak and Tracey N. Sulak

A smaller percentage of inmates in the criminal justice system have completed high school or earned a GED diploma compared with the general population (Harlow, 2003). It is estimated that 60 percent of state prison inmates and 53 percent of local jail inmates have completed high school or attained a GED diploma, while 82 percent of the general population are classified accordingly (Harlow). Unfortunately, the gap between these numbers appears to be increasing: The Survey of Inmates in State and Federal Correctional Facilities conducted in 1991 and 1997 show an increasing trend in the number of inmates without a completed high school education or GED diploma at both the federal and state prison levels (Harlow).

As a result of the education gap between inmates and the general population, education has become a part of the prison system. In 2000, approximately nine in 10 state and private prisons and all federal prisons offered some type of educational programming for inmates (Harlow, 2003). The majority of these programs could be classified as basic adult education or secondary education and were established to prepare inmates for the GED test (Harlow). Less than half of state prisons offered a special education program and slightly more than half offered vocational training specifically designed to increase inmates' employment opportunities upon release (Harlow). Even though prison systems have typically offered educational programs, these programs are often not designed by educators and are directed by administrators who may or may not have any educational training (Gehring, 2007).

Historically, prisons have placed an emphasis on rehabilitation and education as a way to reduce recidivism. Employment is often a stipulation of parole and obtaining a higher degree of education may be a way to increase the chances of an ex-inmate finding employment within the specified period of time (Zgoba, Haugebrook

and Jenkins, 2008). Unfortunately, education within the prison system tends to be narrow in focus and, when considered as a part of the entire prison program, the effects of education on recidivism can easily be masked by other factors such as the increase in the likelihood of committing additional crimes post-imprisonment and the increased incidence of abuse occurring in prison situations (Warner, 2007). When an educational program addresses an inmate as a whole person, some of the negative effects of imprisonment may be mitigated. In order to achieve this, education in prisons should be viewed as a way to increase the inmates' involvement in society through positive interactions rather than a punitive model that only addresses deficits.

An additional problem with the old-fashioned, punitive model of prison education is that it does not always address the needs of every inmate. If the true goal of education in the prison system is to decrease recidivism, then these programs should be available and accessible to all inmates. With the current educational situation, inmates with a learning disability or intellectual disability may not have the same access to or ability to succeed in educational programs as other inmates. Most employees in the criminal justice field, including police officers, do not have training to recognize or accommodate learning and intellectual disabilities (Hayes, 2007). Early identification would make it possible to include these inmates in educational opportunities and to accommodate any special needs indicated by an evaluation of an inmate; but, early identification requires training for all of the involved employees.

## Effects of a Disability

To understand the impact of this situation on individual inmates, one needs to understand what it means to have a learning or intellectual disability and the impact of this diagnosis on life outcomes. Learning and

intellectual disabilities are defined as limitations of mental and adaptive functioning, including communication and social skills (National Dissemination Center for Children with Disabilities, 2009). The limitations can occur to varying degrees and the impact on an individual's life outcome may be contingent on the gap between the existing limitations and society's expectations being addressed. With the required training, employees in the criminal justice system could recognize these gaps and address them within the educational system of the prison.

Literacy can also have an impact on an individual's educational trajectory. A broad definition of literacy includes the ability to use and understand printed material encountered in everyday life to meet the goals and challenges faced by an individual (Fisher, 2001). Individuals who are not able to meet the standards of literacy may not be able to complete educational programs to receive a diploma and subsequently may be at risk for criminal behavior. Harlow (2003) found that 34.9 percent of local jail inmates dropped out of school for behavior or academic problems or a loss of interest compared with 17 percent of the general population. Harlow also found an association between age and educational attainment in the state prison system; a younger inmate tended to be less educated than an older inmate. While low levels of literacy do not condemn an individual to criminal behavior, literacy level may restrict the types of employment available to a person. Once an individual has engaged in criminal behavior, low levels of literacy may lead to other complications. For example, an inmate with low literacy may not be able to understand court documentation, and he or she may lack access to programs that could help an inmate make a positive transition back into society upon sentence completion (Feierman, 2006).

Low levels of literacy may have an effect on an inmate's educational tra-

jectory prior to engagement in criminal behavior, and the failure to find academic success may increase the likelihood of eventual incarceration. In state criminal justice systems, 68 percent of inmates are reported not to have received a high school diploma or GED prior to imprisonment. Of this group of inmates, 66 percent report having a learning disability while more than half report having a speech disability (U.S. Department of Justice, 2003). The lack of a high school diploma or GED and having a language-oriented disability are both associated with low levels of literacy, according to findings from the National Assessment of Adult Literacy (NCES, 2007).

In the juvenile justice system, the number of inmates receiving special education services is four times higher than in the public school system (Quinn et al., 2005). According to a study by Bryan (2004), young offenders were aware of their own disabilities and were able to self-report the same or similar needs, which were later confirmed in testing. Additionally, Talbot and Riley (2007) found that many inmates with a learning disability claimed not to understand the words used in their courtroom proceedings or did not understand the meaning of their court proceedings. Thus, these inmates may not understand the plea they are entering or the crime for which they are being convicted. This lack of understanding on the part of inmates could reinforce an external locus of control, i.e., many inmates believe they do not have control over the events affecting their lives, which Goodman, Leggett and Garrett (2007) found to be more prevalent in inmates with intellectual disabilities.

By having an external locus of control, individuals are typically less likely to perceive themselves as in control of their lives. When these individuals encounter problems in an educational setting, they lack the ability to see a solution and may choose a path with deleterious outcomes. When compared with the general population, twice as many inmates in the local criminal justice system report dropping out of school prior to graduation because of behavior or academic problems or a loss of interest in school (U.S. Department of Justice, 2003). While these self-report statistics must be viewed with caution since inmate populations can endorse self-serving

positions to minimize blame or deny responsibility for their actions, it is still worthwhile to compare these numbers with the general population's statistics regarding learning disabilities and drop-out rates. Inmates with an external locus of control may also have more difficulty benefiting from the programs designed to assist in a smooth transition to the community. These problems could be compounded when an intellectual or learning disability is present. Additionally, Vacca (2004) found that inmates often leave school because of problems with literacy and a negative view of education, which would make it unlikely that these inmates would choose to take advantage of educational opportunities in the prison setting.

While many inmates appear to report having a learning disability, the question remains as to whether inmates are more likely to report having a learning disability than the general public and whether reporting the presence of a learning disability is related to lower literacy scores. Individuals with learning disabilities, especially those with reading disorders or disorders of written expression (American Psychiatric Association, 2000), have lower levels of literacy achievement compared with their typically developing peers. Lower levels of literacy appear to be over-represented in the criminal justice system because problems with literacy increase a person's risk of involvement in criminal behaviors (Bryan, 2004). Rankin (2005) claims the lower literacy levels of inmates reflect their lack of a high school education, not their incarcerated status. Males ages 20 to 30 dominate the state criminal justice system and this group of inmates has significantly lower literacy rates than the general population (U.S. Department of Justice, 2003).

According to Vacca (2004), more than half of the adults in federal and state prisons cannot read or write well and have less than an eighth-grade education. A research brief released by the Open Society Institute, a private operating, grant-making foundation based in the U.S., reveals that 19 percent of adult inmates are completely illiterate, with 40 percent being functionally illiterate (Open Society Institute, 1997). Functionally illiterate inmates may struggle to complete a job application, understand the legal system and gain ac-

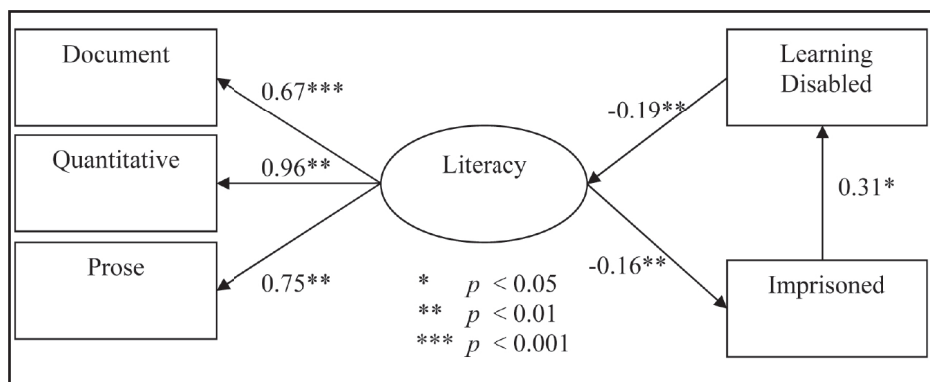
cess to legal assistance. Given the connection between lower levels of literacy and the inmate population, Bryan (2004) suggests a link between early language difficulties and the later development of mental health problems, which could lead to criminal activities.

The purpose of the current study was to examine the association between literacy skills, learning disabilities and imprisonment. While previous literature indicates that inmates have lower levels of literacy and report higher rates of learning disabilities, this research does not examine literacy and reporting a learning disability in tandem with imprisonment. The authors posit that inmates may have lower levels of literacy compared with the general population, but this association may be because these inmates are reporting learning disabilities at higher rates. In this sense, lower levels of literacy in the inmate population may be attributable to untreated learning disabilities. In the current study, the authors examine how literacy and reporting a learning disability is associated with an individual being imprisoned. To achieve this, structural equation models were employed.

## Method

**Measure.** Data were collected as part of the 2003 *National Assessment of Adult Literacy* (NAAL) study (NCES, 2007). The 2003 NAAL assessed the English language literacy of adults (ages 16 and older) in the U.S. as a follow-up study to the 1992 NAAL. The 2003 NAAL study consisted of two samples: adults age 16 and older in the general population; and inmates age 16 and older in state and federal prisons. Across both samples, the NAAL measured literacy across three scales: prose, document and quantitative. Prose literacy refers to the knowledge and skills to perform tasks such as editorials, news stories and instructional materials. Document literacy refers to the knowledge and skills needed to perform tasks such as job applications, payroll forms, transportation schedules, maps, tables and labels. Quantitative literacy refers to the knowledge and skills to perform tasks such as balancing a checkbook, completing an order form and determining the amount of interest from a loan or tip on a check.

**Figure 1. Path Diagram for Literacy, Learning Disabilities and Imprisonment**



**Participants.** The current study consisted of a sample of 19,258 individuals. Approximately 53.8 percent ( $n=10,362$ ) of the participants sampled were female while the remaining 46.2 percent ( $n=8,896$ ) of the sample were male. With respect to race, 57.3 percent ( $n=11,035$ ) of the sample identified themselves as white, 20.5 percent ( $n=3,943$ ) identified themselves as black, 17.2 percent ( $n=3,312$ ) identified themselves as Hispanic and 5.0 percent ( $n=963$ ) identified themselves as other. Of the sample, approximately 6.0 percent ( $n=1,156$ ) of the sample were incarcerated. Approximately 6.5 percent ( $n=75$ ) of the inmates sampled were female while the remaining 93.5 percent ( $n=1,081$ ) were male. With respect to race among the inmate sample, 33.8 percent ( $n=391$ ) of the sample identified themselves as white, 42.5 percent ( $n=491$ ) identified themselves as black, 18.9 percent ( $n=218$ ) identified themselves as Hispanic and 4.8 percent ( $n=56$ ) identified themselves as other.

**Procedure.** Analyses were performed in *MPlus* (v. 5.10; Muthén and Muthén, 2008). Missing data for scores were analyzed using full information maximum-likelihood (FIML) as the method of estimation. As an extension of maximum likelihood, FIML takes advantage of all possible data points in analysis. Enders and Bandalos (2001) indicated that FIML is superior to listwise, pairwise and similar response pattern imputations in handling missing data that may be considered ignorable. Weights were employed in *MPlus* (v. 5.10) to produce accurate population estimates based on sample characteristics by accounting for sampling errors due to random discrepancies between the true population and sample achieved.

**Analysis.** Structural equation models were performed to examine

the association between literacy skills, having a learning disability and imprisonment. In performing the current analyses, six statistics reflecting fit were reported: the chi-square test statistic; the ratio of chi-square statistic to degrees of freedom; the root mean square error of approximation; the Tucker Lewis Index, also known as the Non Normed Fit Index; Weighted Root Mean Square Residual; and the Comparative Fit Index as appropriate. No post hoc model modifications were made.

## Results

In evaluating model fit, the chi-square goodness-of-fit statistic was significant, indicating that the data may not fit the model,  $\chi^2(1) = 3.92$ ,  $p = 0.048$ . The chi-square statistic is sensitive to sample size, thus an adjunct discrepancy-based fit index may be used as the ratio of chi-square to degrees of freedom ( $\chi^2/df$ ). A  $\chi^2/df$  ratio value less than 5 has been suggested as indicating an acceptable fit between the hypothesized model and the sample data (MacCallum, Brown and Sugawara, 1996). With a  $\chi^2/df$  ratio value of 3.92, the proposed model may have an acceptable fit. The root mean square error of approximation compensating for the effects of model complexity was 0.016, which according to Browne and Cudek (1993) indicates an acceptable fit of the model being less than or close to 0.05. As the model was saturated with one degree of freedom, model fit was perfect, indicating a value of 1.00 for the Tucker Lewis Index and a value of 1.00 for the Comparative Fit Index. Hu and Bentler (1999) note that fit index values of 0.95 (or better) are indicative of good fit. A Weighted Root Mean Square Residual value of 0.357 sug-

gests a good fit in models containing both continuous and categorical variables when less than 0.90 (Muthén & Muthén, 2006). Figure 1 contains the path diagram for the association between literacy, having a learning disability, and being imprisoned.

After establishing model fit, the model can then be examined with respect to individual path values. There was a statistically significant and inverse association between reporting a learning disability and literacy scores, with a standardized path coefficient value of -0.19. This result suggests that the more likely an individual is to report having a learning disability that there will be lower levels of literacy. Additionally, there was a small, significant and inverse relationship between literacy and imprisonment with a standardized path coefficient value of -0.165. As literacy scores increase, it appears to lower the likelihood of an individual being imprisoned. Finally, there was a moderate, significant and positive relationship between reporting to have a learning disability and imprisonment with a standardized path coefficient value of 0.31. This result indicates that the higher the likelihood of being imprisoned, the higher the likelihood of reporting to have a learning disability. This result does not suggest that individuals with learning disabilities are more likely to be imprisoned, but rather that inmates are more likely to report having a learning disability than individuals not incarcerated.

## Discussion

The results of the current study add to the body of literature indicating an inverse relationship between literacy and imprisonment and, specifically, the relationship to having a learning disability. Reporting the presence of a learning disability was significantly associated with having a lower level of literacy. These results indicate that the more likely an individual is to have a learning disability, the more likely the person will report having lower levels of literacy. This result is logical for individuals with learning disabilities given that these initial lower levels of literacy are how they are identified as having a learning disability. The results also indicate an inverse relationship between literacy and imprisonment, which can be explained by a variety of factors. For instance, an individual with a higher



level of literacy would be better able to assist in counsel when facing trial and would have a better understanding of the courtroom proceedings (Talbot and Riley, 2007). In the criminal justice system alone, higher levels of literacy would appear to assist an individual in possibly securing an acquittal or receiving a lesser sentence.

Conversely, lower levels of literacy would make these tasks very difficult. Offenders with lower levels of literacy may not have the verbal skills to gain access to programs that could help them achieve reduced sentences or access to therapy provided through the criminal justice system. Bryan (2004) explains that most intervention programs in the criminal justice system are verbal in nature, so these programs would not be helpful to a person with communication difficulties. Talbot and Riley (2007) found that inmates with language disabilities did not have access to programs that would help address their offending behaviors and make transition to society easier upon release. These offenders will be better able to reintegrate into society if they receive training on a number of different subjects, including basic literacy and interpersonal relations. Offenders could also receive training in understanding their own academic weakness and learn how to become their own advocate.

More important, the results of the current study indicate a positive association between being imprisoned and having a learning disability. Using a large, nationally representative data set (NCES, 2007), the current results indicate that inmates are more likely to report having a learning disability than noninmates. To reiterate, this result does not suggest that individuals with learning disabilities are more likely to become imprisoned. However, this result does suggest that inmates are significantly more likely to have a learning disability than an individual in the general population. Among inmates, it appears that there is a higher likelihood of having a learning disability, which is in turn associated with lower levels of literacy. These lower levels of literacy are then associated with a higher likelihood of imprisonment. The results of the current study would suggest important implications for practitioners and policymakers.

For practitioners and policymakers in correctional education, the

value of literacy programs for inmates cannot be over-emphasized. As lower levels of literacy are associated with a higher likelihood of imprisonment using a large, nationally representative sample, improving literacy skills would appear to reduce rates of recidivism in the criminal justice system. Vacca (2004) claims that inmate education programs reduce recidivism by showing inmates a way to achieve successful employment in the community upon release. Literacy programs for inmates may be beneficial in not only reducing rates of recidivism but also in increasing rates of GED or high school equivalency attainment among inmates (U.S. Department of Justice, 2003). Thus, the introduction of literacy programs for inmates would serve to increase educational attainment among this population given that literacy skills are very much a prerequisite to educational achievement.

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Additionally, the results of the current study indicate that specific interventions for inmates with learning disabilities should be developed to overcome difficulties obtaining much-needed literacy skills. Since inmates are more likely to have a learning disability compared with the general public, the results of the current study would indicate that cer-

tain literacy programs should be focused on serving this special population of inmates in the criminal justice system. One successful literacy program for juvenile offenders found that individualized instruction and a highly organized, explicit and direct curriculum contributed to greater-than-expected increases in literacy during a short period of instruction (Coulter, 2004). Findings such as this reveal that a literacy program alone may not assist an inmate with a learning disability unless the program is designed to specifically address the needs of the involved inmate. Although low literacy may result from things other than learning disabilities, individuals with low levels of literacy may also benefit from explicit, direct instruction as indicated in the study by Coulter (2004).

In conclusion, the results of the current study indicate the need for literacy programs for inmates. Recent research reveals that successful education programs in correctional facilities focus on explicit and direct instruction in literacy, but also include highly relevant material (Coulter, 2004). Additionally, these programs should be used to connect inmates to the larger community by focusing on the learning needs of inmates and replicating the services available to the general population (Warner, 2007). Educators of inmates should be encouraged to focus on all aspects of the inmates' development, including psychological well-being and educational attainment, and to view learning as a life-long pursuit connected to increased levels of community involvement and increased self-esteem (Warner). Using a large, nationally representative sample of inmates and noninmates (i.e., the general public), this study provides evidence that lower levels of literacy are associated with higher rates of imprisonment. This imprisonment is, in turn, associated with higher rates of having a learning disability. These individuals with learning disabilities then have lower levels of literacy. The results of the current study show how levels of literacy skills, learning disabilities and imprisonment are associated.

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