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RELIABILITY AND VALIDITY OF THE “*SELF-DETERMINATION STUDENT SCALE*”
WITH AN ADJUDICATED INCARCERATED DELINQUENT POPULATION

by

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CHAPTER 1

INTRODUCTION

In addition to ensuring students achieve high academic standards, educators must also foster skills requisite for a successful post secondary experience. Examples of such experiences include post secondary education, training or employment and independent living (O'Leary & Williams, 2000). A law abiding and productive citizen is an invaluable outcome of any formal education process. Self-determination and critical thinking skills are prerequisite skills for citizenship in modern society, because they are the catalyst for social change and advancement. Field and Hoffman (1994) defined self determination as: "the ability to identify and achieve goals based on a foundation of knowing and valuing oneself" (p. 164).

Self-determination for incarcerated delinquent youth takes on an added degree of importance because of their background and institutional experience (Novotny, Seifert, & Werner, 1991). Agnew (1983) stated that delinquent youth typically have experienced an array of dysfunctional relationships devoid of healthy role models. Bullock and McArthur (1994) indicated this population is comprised of a higher percentage of individuals with disabilities.

Field, Martin, Miler Ward and Wehmeyer (1997) stated that among other things those who are self-determined are able to identify personal preferences, interests, strengths, and limitations; differentiate between wants and needs; make choices based upon wants and needs. Similarly, they consider multiple options and anticipate consequences when making decisions evaluate decision making and revise as needed. Self-determined individuals work towards positive goals and solve

problems effectively. Lastly, they develop independence and interdependence, self-regulate, persist, communicate, and are able to take pride in themselves.

An internal locus of control is a precursor for self-determination (Field & Hoffman, 1994). Conversely, an external locus of control is a barrier to the development of self-determination, and a conduit for anti-social behaviors. Hirshi and Gottfredson (1990) characterized individuals low in self control as likely to be impulsive, physical, and to have a low frustration tolerance. Although a low level of self-control is a good predictor of overall criminal behavior, it is an especially powerful marker for violent crime (Barron, 2003).

The needs of incarcerated delinquent youth related to self-determination may differ from those of mainstream youth. Delinquent youth are more likely than non-delinquent youth to have an external locus of control. Similarly, their intellectual abilities, social skills, verbal skills and levels of self-efficacy are generally poorer than non-delinquent youth. These youth are often the product of dysfunctional families with a history of social alienation and substance abuse.

A significant percentage of this population suffers from some variety of disability as well. Although many youth experience some of these same problems, and do not become delinquent, the breadth and magnitude of these problems are likely different for incarcerated delinquent youth.

The self-determination model (Field & Hoffman, 1994) identified the salient aspects of self-determination that are volitional and amenable to change. Specifically, the model entails five elements: (I) Know Yourself, (II) Value Yourself, (III) Plan, (IV) Act, and (V) Experience Outcomes and Learn. These elements are

further divided into sub-scales along the poles of global and local, and positive and negative. Global relates to overall applications of self-determination; whereas, local pertains to specific locations, i.e. classroom, home, etc. Positive and negative subscales relate to the perceived strength or weakness in self-determination. The actual self-determination assessment battery developed by Field, Hoffman and Sawilowsky (1995) consists of a *Self-Determination Knowledge Scale (SDKS)* pre and post test, *Self-Determination Parent Perception Scale (PPS)*, *Self-Determination Teacher Perception Scale (TPS)*, *Self Determination Observation Checklist (SDOC)* and the “*Self-Determination Student Scale*” (*SDSS*).

The “*Self-Determination Student Scale*” (*SDSS*) is a self-report survey consisting of 92 items in both the affective and cognitive domain. The self-determination student scale was written for assessing self-determination among high-school aged youth with and without disabilities. It has not heretofore been normed with a population of delinquent juveniles in a residential treatment setting.

Purpose of the Study

The purpose of this study is to determine the reliability and validity of the “*Self-Determination Student Scale*” (*SDSS*), (Hoffman, Field & Sawilowsky, 2000), with an adjudicated and incarcerated delinquent youth population in state operated medium, closed and high secure juvenile delinquent treatment facilities.

Justification of the Study

Delinquent youth suffer from diminished levels of self-control (Calabrese & Adams, 1990). Self-regulation is a prerequisite for almost any endeavor;

consequently, it is imperative all child caring agencies develop a rubric for periodically evaluating this dimension, and nurturing its development during the course of treatment.

Although the major impetus behind incarcerating a youth is community safety, once a youth is in residential placement this aim has been accomplished. Transitions services should therefore commence as soon as possible once a youth is placed in a residential setting. Similarly, re-integrative services should begin as soon as there is a clear indication of a youth's subsequent release from placement.

Youth who are disabled and delinquent can reasonably be expected to experience greater deficits on the attribute of self-control. In addition, because a significant proportion of the delinquent population will be eligible to receive special education services, "504" or community mental health services, further enhancements of these services are appropriate. Lastly, family and community support mechanisms are severely lacking for many delinquent youth that have been institutionalized at their time of placement, and at their release these resources are likely less abundant than at the time of their placement.

Limitation of the Study

This study relies exclusively on self-reported data, and does not include the *Self-Determination Knowledge Scale (SDKS)*, *Self-Determination Parent Perception Scale (PPS)*, *Self-Determination Teacher Perception Scale (TPS)* or the *Self-Determination Observation Checklist (SDOC)*. These other instruments in the Self-Determination Assessment Battery have the added benefit of compensating for the bias inherent in self-reported data. In addition, because of logistic limitations, some

variation exists between smaller and larger facilities because of differences in how the *SDSS* was administered. As a consequence of the smaller facilities being located further from Central Office; they received only written instructions on the administration of the *SDSS*, versus the informal training received by the teachers at the larger facilities.

CHAPTER 2

Review of the Literature

Self-Determination Theory

The social and behavioral sciences literature is replete with examples of interrelationships between self-determination, intrinsic motivation and an internal locus of control. Positive behaviors and outcomes are associated with intrinsic motivation and an internal locus of control. Conversely, characteristics associated with delinquency are detrimental to development of the individual. This literature review presents a contrast between beneficial aspects of self-determination and its underlying constructs with inherently damaging attributes germane to delinquency.

Reeve, Hamm and Nix (2003) identified three qualities consistently associated with self-determination in literature, internal locus, volition and perceived choice

“Self-determination is the capacity to determine one’s actions as they emerge from an internally focused causality (e.g., reinforcement contingencies) or form an internally focused but nonvolitional causality (e.g., drives, intrapsychic pressures). When self-determined, one acts out of an internally focused, volitional causality based on an awareness of one’s organismic needs and a flexible interpretation of external events” (p. 388).

Many mental health and educational professionals believe merely affording students with increased options will yield a corresponding increase in the amount of self-determination they experience from a given activity. The three constructs, internal locus, volition and perceived choice do not vary proportionately with self-determination (Reeve et al., 2003). In their study of these three contributors to self-determination they

found self-determined actions derived from internally located and volition, but not from perceived choice per se. This finding is significant because of its implications for promoting self-determination through key determinants - self-awareness and an internal values structure.

Conceptually, self-awareness is reflected in each of the following definitions as the origin of self-determination. Field and Hoffman (1994) defined self-determination as “the ability to identify and achieve goals based on a foundation of knowing and valuing one self.” (p. 264) Martin and Marshall (1995) offered the following synopsis of self-determination as it relates to special education:

Describing individuals who know how to choose-they know what they want and how to get it. From an awareness of personal needs, self determined individuals choose goals, then doggedly pursue them. This involves asserting an individual’s presence, making their needs known, evaluating progress towards meeting goals, adjusting performance and creating unique approaches to solving problems. (p. 147)

Motivation, particularly intrinsic motivation is the volitional component of self determination identified by Reeve et al., (2003) as one of the essential elements of this concept. Motivation is classically divided into two branches, intrinsic motivation and extrinsic motivation. (Deci, & Ryan, 2000) defined intrinsic motivation as “the doing of an activity for its inherent satisfactions rather than for some separable consequence.” (p. 54) Deci and Ryan (2000) defined extrinsic motivation as “a construct that pertains whenever an activity is done in order to attain some separable outcome” (p. 60).

Deci and Ryan delineated between autonomous forms of extrinsic motivation and controlled forms of extrinsic motivation. One of the origins of the term self-determination comes from (Deci, 1980), who differentiated between autonomous intentions and controlled intentions. Although intrinsic motivation is sometimes mistakenly viewed synonymously with self-determination, Deci highlighted that the salient difference between intrinsic motivation and self-determination relates to the degree of autonomy involved in the adoption of a goal or some desirable outcome. As in previous definitions of self-determination, the concept of volition is central to Deci's definition.

Prior to Deci, DeCharms (1968) postulated the phrase "Locus of causality" to infer humans are the origin of their behavior. Human behaviors do not occur in a vacuum, strictly internally, but rather as a consequence of external forces, humans determine their behavior. External factors being equal; some individuals will still moderate their behaviors, and others will behave in the context of the situation. Those individuals, who viewed their behavior as being a consequence of their environment, were labeled as "Pawns", whereas those individuals who viewed their behaviors as a consequence of their own choosing were labeled as "Origins".

Origins and Pawns are not absolute, but rather situational. In some instances, people behave as Pawns, and in other instances they behave as Origins. The salient point is the perception that an individual behaves out of his/her own volition rather than coercion this implies power or freedom. Conversely, the belief that one's behavior is caused by outside forces is tantamount to powerlessness or imprisonment.

Self-determination and locus of causality are highly synchronized in that a high degree of internal locus of causality will result in a corresponding high level of self-

determination, and reciprocally, an external locus of causality will result in a low level of self-determination. Meyers and Wong (1988) found individuals who have a greater orientation toward an internal locus of control experienced fewer episodes of depression, anxiety and neuroticism, and possessed a higher level of self-esteem than individuals having an external locus of control.

Several other studies have been uncovered that found controllers (rewards made contingent on task, threats, competition and pressure) diminish intrinsic behavior (Ryan & Deci, 2000). The self-determination theory (Deci & Ryan, 1985) and (Deci & Ryan, 1991) described internalization as the key component of self-determination. They distinguished internalization along two bipolar continuums, introjection, and integration.

Introjection involves a person accepting a rule or a reward as a precursor for performing a task or activity, but does not internalize this activity as their own. Integration, involves an individual taking ownership of an activity and everything associated with it. The key component separating these two poles is autonomy. Integration is also associated with the goal to develop ability, or a task goal orientation (Midgley, et al., 1998). In general, task goals have been found to yield more effective learning strategies than ability goals.

Deci & Ryan (2001), in a review of research on hedonic and eudaimonic well-being, cited several studies indicating experiences that promote subjective well-being SWB, do not necessarily promote eudaimonic well being. Hedonism is the philosophy that well-being is a function of pleasure or happiness (Kahneman, Diener, Schwarz, 1999). The philosophy of Eudaimonism is the view that well-being consist of more than just happiness, and includes actualization of the human potential (Waterman, 1993). Nix

et al (1999) revealed achieving success at a task while contemporaneously feeling pressured to succeed did result in happiness (correlated with SWB), but not in vitality (correlated with eudaimonic well-being). Conversely, they found succeeding at a task while feeling independent resulted in feelings of happiness and vitality.

Sheldon & Elliot (1999) found that although goal attainment alone resulted in feelings of increased well-being, these feelings were not as strong as when the goals attained were not self-concordant. Self-concordant goals are essentially goals that are self-internalized. Similarly, Sheldon & Kasser (1998) examined goal attainment over a period of time, and found goal attainment was associated with greater SWB and fewer incidents of depression. They noted that non self-concordant goals, goals not relevant to basic psychological needs, resulted in a smaller increase in SWB.

Authentic self-expression and self-organized behavior were found to be independent predictors of overall mental and physical well being in a study involving 193 undergraduate students enrolled in a psychology course at the University of Rochester (Sheldon, Ryan, Rawsthorne and Ilhardi, 1997). Their findings also revealed social roles which participants feel most authentic about enhance extraversion, motivation, openness to experience, agreeableness and minimize neurotic thoughts. The implication for educational goal setting is that a degree of student ownership is crucial to the eventual desired outcome of goal attainment.

Bruno (2000) compared the explanatory style, depressive features and level of self-determination between a treatment and control group following a 16 week self-determination intervention. A post hoc statistical analysis revealed a significant decrease in the level of depressive features (normal, moderate and severe) between

the post test treatment group distribution and the pre test treatment group distribution. A significant decrease in the number of at-risk youth for depression (moderate and severe) in the treatment group occurred following the post test. However, the number of youth at risk for depression in the control group was greater following the post test. This analysis indicates implementing a self determination curriculum can lead to a significant reduction in the number of at risk youth with moderate and severe levels of depressive symptoms.

Houchins (1998) studied the impact of a four week self-determination intervention on 48 post adjudicated male and female juvenile delinquents residents in the Florida Department of Juvenile Justice system. A regression analysis was employed to explore the relationship between self-determination knowledge and reading scores of both the pretest and post test groups. Significance at the .000 level was achieved for the linear regression between self-determination knowledge scores and reading scores for both the pretest and posttest group.

In addition, a regression coefficient of determination (R^2) of .42 was obtained for the relationship between pretest self-determination knowledge and reading scores. An even higher R^2 of .53 was derived for the post test groups. The practical implications of these findings are that heightened self-determination knowledge scores may result in improved reading achievement scores.

Characteristics of Juvenile Delinquents

In contrast with the positive aspects associated with self-determination, characteristics common to juvenile delinquents are generally negative. Incarcerated delinquent youth's academic efficacy is less than the non-delinquent population, and

their propensity for substance abuse appears to be greater. Social environmental factors for juvenile delinquents including familial relationships, peer relationships and socialization skills appear to be inferior to the non-incarcerated and non-delinquent population.

In respect to academic ability, several studies have found delinquents typically function at lower intellectual levels than do non-delinquent youth. Beebe and Muller (1993) uncovered in their research on 583 youth in out of home placement that 95% were functioning below grade level in the content area of reading, and 98% were functioning below grade level in the content area of math. This supports the position of Hirschi (1969) who remarked "academic competence is of such obvious importance in academic performance and commitment to the school and to the educational system that its assumed lack of relation to delinquency must be considered one of the wonders of modern social science" (p. 111).

Moffitt, Gabrielli, Mednick and Schulsinger (1981), in controlling for the effects of (SES), found among a sample of 129 males administered the Wechsler Intelligence Scale for Children (WISC) that youth who had no offenses had scale Intelligence Quotients (IQs) of 113, Verbal IQs of 110 and Performance IQs of 115. Similarly, the means for youth having two or more offenses were 102, 98 and 107. It may be that delinquent youth experience more initial failure in their early academic careers and consequently come to value academic accomplishments less highly than non-delinquent youth.

Quay (1987) concluded from a review of literature that as many as two-thirds of delinquents are functioning at inferior verbal ability levels than non delinquents as

determined by standardized intelligence test. Wilson and Herrnstein (1985) found the difference between delinquents and non-delinquent intellectual ability to be primarily verbal. A conservative estimate of academic tasks requiring verbal skills would be fifty percent. This deduction would mean over 60 % of delinquent youth struggle with over half of their academic assignments.

McGaha and Leoni (1995) found incarcerated youth from alcoholic families and incarcerated youth from non-alcoholic families were statistically more dysfunctional than were a national sample of nondelinquent youth. Additionally, their study reflected among youth from alcoholic parents 63% reported documented incidents of family violence, versus only 29% for youth from non alcoholic parents. Novy and Donohue (1985) found delinquents often viewed conventions associated with non-delinquents activities as irrelevant. Calabrese and Adams (1990) studied 157 incarcerated youth and 1,318 non-incarcerated youth and compared the scores of each of these two groups on the *Dean Alienation Scale* (Dean, 1961). Their findings revealed these institutionalized youth had statistically significant greater amounts of overall alienation, isolation, and powerlessness than did the non-delinquent youth.

Chung and Elias (1996), in their study of 556 adolescents from a suburban school district, utilized cluster analysis to identify four distinct subgroups of youth that exhibited problem behaviors (delinquency, smoking, drugs and alcohol usage). The study found one cluster of youth showed fewer problem behaviors. This group of youth was found to have greater academic efficacy, more participation in extra-curricular activities and a greater number of positive life events than groups comprised of youth involved in multiple delinquent events. Conversely, students who do not value the

importance of school are at a greater risk of engaging in problem behaviors (Farrington & Hawkins, 1991).

Herschi (1969) found the bond of affection for most individuals serves as a deterrent to delinquent behavior. Herschi's analysis of delinquency indicated that delinquents were less likely than non-delinquents to enjoy a close relationship with their parents. Hindelang (1973) found an inverse relationship between parental attachment and delinquency. These findings support the assertion that parental attachment is a source of protection against involvement in serious delinquent behavior.

Clark and Shields (1997) noted in a study of 339 adolescents that youth experiencing open communication with at least one of their parents were associated with less serious delinquent acts than youth experiencing problem communication with at least one of their parents. Overall, they found open communication to be a good source of resiliency in preventing delinquent behaviors.

In a study of the correlates of psychological and emotional functioning among a sample of detained youths by Dembo, La Voie, Schmeidler and Washburn (1987) noted that a statistically significant relationship was found between antisocial orientation, physical abuse, substance abuse, self-derogation and the number of placements in secure detention. Loeber, Farrington, Stouthamer-Loeber, Moffitt, and Caspi (1998) identified individual and social environmental factors as the primary causes of delinquency. Specifically, they noted impulsive behavior, low IQ and a low threshold for perceiving negative experiences, i.e. fear and anxiety. Societal factors such as slack parental supervision, receiving public assistance, poor mother-son communication and corporal punishment were also positively associated with delinquency.

Youth with Disabilities

In addition to the discrete societal stressors most commonly associated with incarcerated juvenile delinquents is the higher ratio of youth with disabilities within this population. In particular some disabilities may increase the probability that youth will experience failure in an academic setting, or exhibit problem behaviors that leads to contact with the criminal justice system. Blackorby and Wagner's (1996) examination of students with disabilities found they were often times less successful in post school years than students in the general population.

The Individuals with Disabilities Education Improvement Act of 2004 offered the following general definition of a youth or child with disabilities:

(A) IN GENERAL.—The term ‘child with a disability’ means a child—“(i) with mental retardation, hearing impairments(including deafness), speech or language impairments, visual impairments (including blindness), serious emotional disturbance (referred to in this title as ‘emotional disturbance’), orthopedic impairments, autism, traumatic brain injury, other health impairments, or specific learning disabilities; and(ii) who, by reason thereof, needs special education and related services.

There are a variety of different definitions employed to describe youth with disabilities, but as it relates to emotional disturbance, the Individuals with Disabilities Education Act (IDEA) prescribes the following:

A condition exhibiting one or more of the following characteristics over a long period of time and to a marked degree that adversely affects a child's educational performance-

An inability to learn that cannot be explained by intellectual, sensory, or health factors.

An inability to build or maintain satisfactory interpersonal relationships with peers and teachers. Inappropriate types of behavior or feelings under normal circumstances.

A general pervasive mood of unhappiness or depression. A tendency to develop physical symptoms or fears associated with personal or school problems.

A learning disability under IDEA is defined as follows:

A disorder in one or more of the basic psycho-logical process involved in understanding or in using language, spoken or written, which may manifest itself in an imperfect ability to listen, think, speak, read, write, spell, or to do mathematical calculations. The term includes such conditions as perceptual handicaps, brain injury, minimal brain dysfunction, dyslexia, and developmental aphasia. The term does not include children who have learning problems which are primarily the result of visual, hearing, or motor handicaps, or mental retardation, or emotional disturbance, or of environmental, cultural, or economic disadvantage. 34 *Code of Federal Regulations* §300.7(c)(10)

The National Center on Birth Defects and Developmental Disabilities defines mental retardation as follows: Mental retardation is characterized both by a significantly below-average score on a test of mental ability or intelligence and by limitations in the ability to function in areas of daily life, such as communication, self-care, and getting along in social situations and school activities. Mental retardation is sometimes referred to as a cognitive or intellectual disability. <http://www.cdc.gov/ncbddd/dd/ddmr.htm>

The other primary means by which a youth can be classified as having a disability is Section 504 of the Rehabilitation Act of 1974. Under this law, individuals with disabilities are defined as follows:

Persons with a physical or mental impairment which substantially limits one or more major life activities. People who have a history of, or who are regarded as having a physical or mental impairment that substantially limits one or more major life activities, are also covered. Major life activities include caring for one's self, walking, seeing, hearing, speaking, breathing, working, performing manual tasks, and learning. Some examples of impairments which may substantially limit major life activities, even with the help of medication or aids/devices, are: AIDS, alcoholism, blindness or visual impairment, cancer, deafness or hearing impairment, diabetes, drug addiction, heart disease, and mental illness.

In addition to meeting the above definition, for purposes of receiving services, education or training, The Department of Health and Human Services denoted individuals with disabilities as persons who meet normal and essential eligibility requirements. <http://www.hhs.gov/ocr/504.html>

The United States Governmental Accounting Office (GAO) examined 300,000 IDEA youth leaving high school during the 2000-2001 school year (includes those students that graduated with a diploma or alternative credential, dropped out, died, or aged out). The disability characteristics of these youth were as follows: (1) 12% others (Other includes speech or language impairments, multiple disabilities, hearing impairments, orthopedic impairments, visual impairments, autism, deaf-blindness, traumatic brain injury, and other health impairments.) (2) 13% emotional disturbances (3) 14% mental retardation (4) 61% learning disabilities.

Approximately 70% of IDEA students completed high school during the 2000-2001 school year. Specifically, 57 % of IDEA students completed high school with a standard diploma, while 11% completed high school with an alternative diploma. The overall drop out rate for IDEA youth during this period was 29%. The drop out rates varied across disability type. The drop rate was greatest for youth having an emotional disturbance, 55%, and lowest for youth identified as having other cognitive impairments, 13%.

Most IDEA students were working or attending school within a year of leaving high school, although they were more likely to be employed than matriculated in post secondary courses. The GAO found that over ½ of states do not collect data on postsecondary employment and educational data on IDEA youth.

Wehmeyer and Schwartz (1997) in a follow up study of 80 cognitively impaired (mental retardation or learning disability) students were classified into dichotomous

group of high self determination and low self determination prior to their departure from high school. The students either earned a high school diploma or a certificate of attendance during the school year of 1994-1995 in Virginia, Connecticut, Alabama or Texas. There were significant differences in the adult outcome measures between the low and high self-determination groups.

The preference for participants to reside in a residence other than their family home was 44% for the high self-determined group versus only 19% for the low self-determined group. The students in the high self-determination group were more likely to be employed than those students from the low self-determination group. A regression analysis comprised of hourly earnings as the dependent variable, IQ and four separate components of self determination (autonomy, self-regulation, perceived control and self-realization), and secondary vocational education courses for the independent variables. This regression analysis yielded an overall R^2 of .81.

The National Center on Education, Disability and Juvenile Justice Report (1999) indicated many youth in the juvenile justice system have a disability that has never been identified, or misidentified. In addition they found a deficit in the amount of appropriate special educational services for youth with disabilities in residential placements.

One particular aspect of youth with disabilities is the prevalence with which they exhibit deficits in social skills (Gersham, 1997). Social competency is a prerequisite for success in main-stream society; it is also a skill that many delinquent youth have not managed to cultivate. This absence of social ability is perhaps most noticeable in an academic setting.

Teachers tend to value most the very behaviors delinquent youth are least likely to exhibit (Hersh & Walker, 1983). For instance, teachers are most likely to value youth who are compliant, follow directives, and in general do not create disturbances. In contrast delinquent youth at least prior to placement in a residential placement facility, typically have a history of behaving in an aggressive, disruptive or retiring manner. As these youth have a history of school failure, they consequently have a negative association with school and teachers.

Brier (1989) postulated youth with learning disabilities may suffer from low self-esteem as a result of their inability to succeed in the academic environment, and this may lead the youth to engage in more anti-social behaviors to compensate for feelings of academic inadequacies. Kauffman (1997) found youth with emotional behavioral disturbances (EBD) were prone to engage in anti-social behavior because of feelings of academic inadequacies, and other school related problems. Foorman, Fletcher & Frances (1997) estimated that 80% of youth identified as learning disabled also struggle with reading. They also found one in five children with learning disabilities has some degree of difficulty with phonetics, and many require individualized intervention to overcome this handicap.

Along this continuum of social skills is also the ability to relate to peers. Asher, Renshaw, Geraci, and Dor (1979) concluded that children ranked as unpopular with their peers were more likely to propose aggressive tactics to problem-solving scenarios than were youth ranked as popular. In general, youth with learning disabilities have a lower level of peer acceptance, inadequate social skills, and few friends McIntosh, Vaughn, Zaragoza (1991). Gresham (1997) found in a study of at-risk 3rd grade youth

that only 20% of these youth reported having a close friend, in comparison with more than 50% of youth in the control group.

Necomb, Bukowski and Pattee (1993) in a meta-analysis of two-dimensional socio-metric classification models, reviewed peers social preference ratings and peers awareness ratings to evaluate the validity of the two-dimensional approach. Their findings revealed this model was efficient at discriminating among the behavior composites of sociability, aggression, and introversion. In addition, they explored the added attribution of cognition.

The categorical/sociometric groups were Popular, Rejected, Neglected and Controversial. The behavior cluster they found relating to popular peer designation was social competency and cognitive ability. The neglected category was characterized by higher levels of externalization (aggression) and internalization (withdrawal) and inferior cognitive functioning relative to the popular peer status. Similar findings were derived for a group of peers labeled as rejected. The behavior cluster associated with the Controversial label was aggression coupled with cognitive competency.

The research available does not support the notion of incarcerated youth as a heterogeneous population; however, there appears to be a discrete set of social stressors prevalent among these youth. In literature this population is characterized by an external locus of control, diminished intellectual abilities, inferior social skills, poor verbal skills and lower levels of self-efficacy relative to non-delinquent youth. In addition, these youth are more likely to have poor familial relationships, and higher levels of alienation, substance abuse history and more disabilities than non-delinquent youth.

Loeber et al., (1998) noted the cumulative effects of delinquency risk factors, and a positive relationship between serious delinquency and of delinquency risk factors.

Pilot Study

The survey was piloted with youth at the Arbor Heights Community Justice Center initially to determine the feasibility of administering this instrument with youth throughout BJJ. Arbor Heights Center (AHC) is a low secure treatment facility that services males and females in a residential center located on the University of Michigan campus. The population consist of approximately 24 youths ages 12 to 21 with an average length of stay of eight months.

The survey was initially administered by a teacher at the Arbor Heights facility. Youth were instructed that their participation was entirely voluntary, and that the results would aid the bureau to more effectively plan for their successful re-integration into the community following their release. Youth were further advised that the results of their survey would be strictly confidential.

During the course of the initial administration youth were found to have experienced some difficulties committing to a choice on the dichotomous questionnaire. It appeared they felt some ambiguity regarding this issue because in some circumstances they behave that way, and at other times they did not. The teacher discovered instructing the youth to view this in respect to propensity or preference helped to minimize the students' ambiguity.

CHAPTER 3

Methodology

Data

The data underlying this study was secondary (ex post facto) and derived from a 2004 Transition Planning Report completed by the Department of Human Services Bureau of Juvenile Justice Education Support Unit, Lansing, Michigan as part of its strategic planning process. Permission to access the data was obtained from the current director of the Bureau of Juvenile Justice, Lansing, Michigan. The data contains no unique identifying information regarding the participants, and is an aggregation.

Participants

The participants for this study consisted of residents from the Michigan Department of Human Services operated Bureau of Juvenile Justice Training Schools located in Adrian, Escanaba, Whitmore Lake and Prudenville. The youth at these facilities are serving for a variety of offenses, ranging from murder to status offenses. The security level ranges from open medium to high. The various treatment modalities consist of sex offender therapy, substance abuse, mental health and various combinations of each. In addition a small percentage of this population includes youth in detention (none adjudicated youth) pending a court appearance.

Approximately 297 surveys were administered, but because of incomplete information, or failure to follow directions 29 surveys were discarded. Scores were obtained for 268 students.

The mean length of stay (period of incarceration) was 544 days with a (sd=291), ranging from 21 to 1766. The mean age was 17.04 (sd=1.6), ranging from 13 to 21. Of the 268 students, 122 were identified as having disabilities (46%) and 132 were identified as not having a disability (49%). Disability information was missing on 14 students (5%). Of the 122 youth with disabilities: (73%) emotionally impaired; (15%) learning disabled; (2%) cognitively impaired; (1%) other health impairment; (1%) speech or language impairment; (7%) multiple impairments. The remaining students were identified as having disabilities; however, their specific disability category was not identified. The racial group composition was as follows: (1.5%) American Indian/Alaskan Native; (.4%) Asian; (29%) Black; (4.9%) Other; (64%) White. The gender groups consisted of 66 females and 202 males.

Procedure

This study was conducted in accordance with the rules of human and animal investigation committee of Wayne State University, and APA/AERA/NCME standards for ethical conduct or research. Participation in this project was voluntary and youth were advised they would receive an individual profile back as a consequence of completing the survey. The total possible number of participants that could have been included in the study was 440; however, the specific number of youth that declined to participate is not known as this information was not collected. The intent of the survey instrument was communicated to youth prior to administration of the survey.

Youth were advised the survey was being administered to aid the bureau in improving the success ratio of youth re-entering main-stream society following their

release from residential placement. The survey was administered by educational staff typically during one classroom session between June and October 2004. Those youth requiring assistance with reading were assisted by the classroom teacher or other educational staff to complete the survey. Youth were advised to answer each question from the standpoint of their general mode of behavior, and not their current restricted state of confinement.

Research Design

As previously mentioned, data for this study was secondary, and therefore did not involve any variable manipulation, or treatment intervention of any kind. A survey research design was used in the underlying data collection process and contains no unique identifying information regarding the juvenile delinquents. The surveys were administered in a classroom setting, and given in the same manner to all youth consenting to participate.

The survey design was applicable to this project because this was a cross-section study to assess where the bureau's population ranked along the continuum of self-determination. Additionally, because the data in question was strictly aggregate, and contained no identifying information, confidentiality and privacy was maintained in every instance.

Data Gathering Instrument

Hoffman, Field, & Sawilowsky (2000) described the SDSS as follows:
The SDSS is a 92-item self-report instrument that measures both affective
and cognitive aspects of the student's self-determination. The items

contain a brief stimulus to which the student marks 'That's me' or 'That's not me.' The SDSS yields a variety of subscale scores including General Positive, General Negative, Specific Positive, and Specific Negative. The general subscales relate to a student's sense of global self-determination while the specific subscales relate primarily to application in their education, home and related environmental settings. The positive subscales indicate self-determination in areas of perceived strength, while the negative subscales indicate areas of perceived weakness in self determination. (p. 4)

The SDSS involves a minimal level of pre instructions, and can typically be administered to an entire class in one period (approximately 50 minutes).

Instrument Reliability

Internal reliability will be the benchmark to determine how consistent the SDSS measures the student's self-determination. Because there was only one administration of the measurement instrument, internal reliability is the only available estimate of reliability. Cronbach Alpha α will be used to estimate internal reliability. The higher the Cronbach α , the more reliable the test will be. However, .7 and above is generally recognized as acceptable (Nunally, 1978) for social and behavioral science constructs such as character traits.

SPSS software will be used to calculate the Cronbach α . In this instance because the data in question are dichotomous, "That's me" or "That's not me". Thus, the result will be synonymous with the Kuder-Richardson 20 (KR-20) estimate of reliability. "Because Cronbach α is sensitive to the number of items, the Spearman-Brown (SB)

Prophecy formula will be used to correct for attenuation in the subscales of the *SDSS*" (Hoffman, Field & Sawilowsky, 2000, p. 55)

Analysis

This will begin with descriptive data for all of the applicable subscales. The description will encompass frequency distributions including mean, standard deviation and Cronbach α of SDSS scores. A correlation matrix of all subscales will be included.

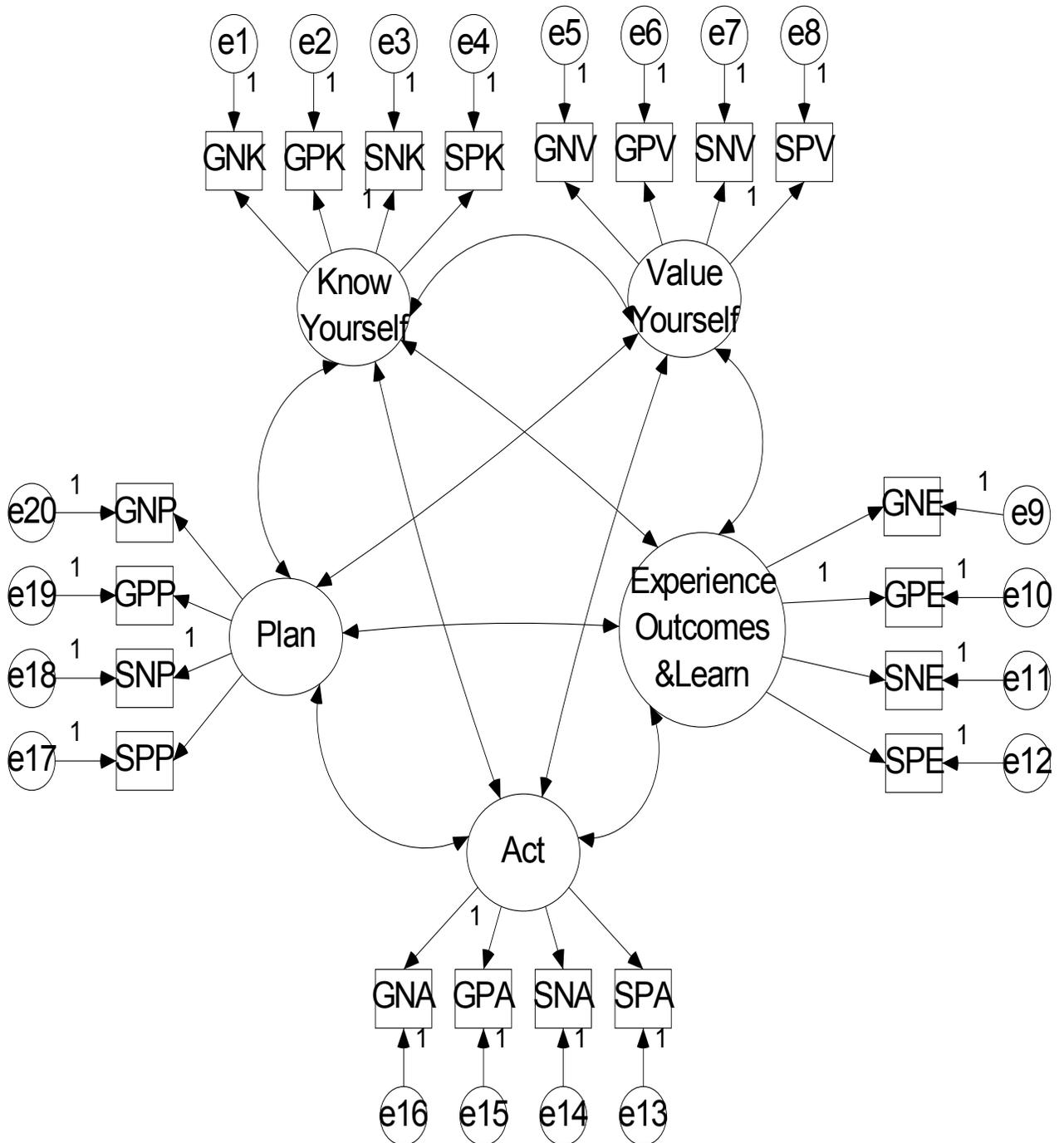
Validity

Validation for the SDSS relates to affective and cognitive aspects of self-determination; therefore, construct validation is the applicable technique. Confirmatory factor analysis will be employed to confirm the psychometric properties of this instrument with an incarcerated delinquent population.

The CFA will be conducted using version 6 of AMOS (Analysis of Moment Structure; Arbuckle, 2003). All analyses will be conducted on the raw data. Multiple indexes of fit will be utilized to evaluate the fit of the model. The indices will include, chi square (χ^2), adjusted goodness-of fit (AGFI), comparative fit, (CFI), standardized root mean square residual (SRMR). The measurement model follows in Figure 1. The observable values will be collapsed into General Positive Subscales, General Negative Subscales and Specific Positive Subscales to account for the absence of variance caused by the dichotomous response to survey items.

Figure 3 - 1

Self-determination Measurement Model



CHAPTER 4

Results

This chapter is demarcated into three distinct parts, first descriptive statistics pertaining to the sub-scales that comprised the observed variables, second reliability statistics, and third validity statistics.

Descriptive Statistics

A One Sample Kolmogorov-Smirnov Test was conducted to ensure the distribution conformed to multivariate normality.

The results follow:

Table 1. General Negative Subscales

One-Sample Kolmogorov-Smirnov Test

		GNA	GNK	GNP	GNE	GNV
N		268	268	268	268	268
Normal Parameters(a,b)	Mean	5.0112	4.10	3.32	2.30	2.90
	Std. Deviation	1.71899	1.023	1.331	.836	1.140
Most Extreme Differences	Absolute	.173	.252	.183	.298	.222
	Positive	.124	.189	.108	.198	.166
	Negative	-.173	-.252	-.183	-.298	-.222
Kolmogorov-Smirnov Z		2.826	4.118	2.995	4.880	3.630
Asymptotic Sig. (2-tailed)		.000	.000	.000	.000	.000

a Test distribution is Normal.

b Calculated from data.

Table 2. General Positive Subscales

		GPA	GPK	GPP	GPE	GPV
N		268	268	268	268	268
Normal Parameters(a,b)	Mean	5.02	4.51	4.18	3.37	4.88
	Std. Deviation	1.133	.747	1.018	.930	1.324
Most Extreme	Absolute	.243	.372	.276	.343	.253

Differences	Positive	.193	.251	.209	.250	.199
	Negative	-.243	-.372	-.276	-.343	-.253
Kolmogorov-Smirnov Z		3.983	6.090	4.520	5.619	4.134
Asymptotic Sig. (2-tailed)		.000	.000	.000	.000	.000

a Test distribution is Normal.

b Calculated from data.

Table 3. Specific Negative Subscales

		SNA	SNK	SNP	SNE	SNV
N		268	268	268	268	268
Normal Parameters(a,b)	Mean	4.49	1.27	2.26	2.99	4.00
	Std. Deviation	1.452	.701	.749	1.083	1.221
Most Extreme Differences	Absolute	.230	.268	.263	.246	.253
	Positive	.150	.233	.211	.175	.206
	Negative	-.230	-.268	-.263	-.246	-.253
Kolmogorov-Smirnov Z		3.764	4.393	4.313	4.035	4.135
Asymptotic Sig. (2-tailed)		.000	.000	.000	.000	.000

a Test distribution is Normal.

b Calculated from data.

Table 4. Specific Positive Subscales

		SPA	SPK	SPE	SPP	SPV
N		268	268	268	268	268
Normal Parameters(a,b)	Mean	4.63	3.99	3.12	3.60	1.43
	Std. Deviation	1.383	.994	1.005	1.281	.686
Most Extreme Differences	Absolute	.202	.222	.255	.215	.333
	Positive	.161	.154	.189	.134	.201
	Negative	-.202	-.222	-.255	-.215	-.333
Kolmogorov-Smirnov Z		3.313	3.641	4.170	3.512	5.451
Asymptotic Sig. (2-tailed)		.000	.000	.000	.000	.000

a Test distribution is Normal.

b Calculated from data.

In every case the subscale distributions are non-normal as $p \leq .01$. This non-normal distribution will be accounted for by employing non-parametric and distribution free test.

Table 5. Subscale Statistics

Item	Mean	Std. Deviation	N
GPA	5.0187	1.13327	268

Item	Mean	Std. Deviation	N
GNA	5.0112	1.71899	268
GPV	4.8806	1.32419	268
SPA	4.6306	1.38265	268
GPK	4.5075	0.74699	268
SNA	4.4925	1.45209	268
GPP	4.1754	1.01811	268
GNK	4.097	1.0231	268
SNV	4	1.22092	268
SPK	3.9851	0.99425	268
SPP	3.6045	1.28091	268
GPE	3.3731	0.92951	268
GNP	3.3246	1.33065	268
SPE	3.1157	1.00451	268
SNE	2.9888	1.08266	268
GNV	2.8955	1.14013	268
GNE	2.3022	0.83581	268
SNP	2.2612	0.74882	268
SPV	1.4328	0.68639	268
SNK	1.2724	0.70076	268

Table 5 contains the mean scores and standard deviations for each of the 20 components (observed variables). The subscales for the latent variables Act and Know have the highest overall mean scores.

Table 6. Intercorrelations of General Negative Subscales with General Positive Subscales

	GNA	GNK	GNE	GNP	GNV	GPA	GPK	GPE	GPP	GPV
GNA	1	.552(**)	.461(**)	.541(**)	.569(**)	.295(**)	.199(**)	.238(**)	.297(**)	.391(**)
GNK	.552(**)	1	.424(**)	.556(**)	.600(**)	.379(**)	.339(**)	.333(**)	.361(**)	.488(**)
GNE	.461(**)	.424(**)	1	.464(**)	.446(**)	.315(**)	.180(**)	.260(**)	.282(**)	.384(**)
GNP	.541(**)	.556(**)	.464(**)	1	.608(**)	.167(**)	.209(**)	.294(**)	.294(**)	.438(**)
GNV	.569(**)	.600(**)	.446(**)	.608(**)	1	.310(**)	.283(**)	.353(**)	.415(**)	.545(**)
GPA	.295(**)	.379(**)	.315(**)	.167(**)	.310(**)	1	.296(**)	.335(**)	.407(**)	.334(**)
GPK	.199(**)	.339(**)	.180(**)	.209(**)	.283(**)	.296(**)	1	.304(**)	.246(**)	.426(**)
GPE	.238(**)	.333(**)	.260(**)	.294(**)	.353(**)	.335(**)	.304(**)	1	.392(**)	.379(**)
GPP	.297(**)	.361(**)	.282(**)	.294(**)	.415(**)	.407(**)	.246(**)	.392(**)	1	.440(**)
GPV	.391(**)	.488(**)	.384(**)	.438(**)	.545(**)	.334(**)	.426(**)	.379(**)	.440(**)	1

Note. (**) $p < .01$, (*) $p < .05$.

The minimum correlation for the General Negative subscales was .42, and the maximum correlation was .61, with an average of .52. The minimum correlation among the General Positive subscales was .25, while the maximum correlation was .45, with an average correlation of .46. Each negative subscale correlation was significant at $p \leq .01$. The maximum correlation for the General Negative subscales with the General Positive subscales was .55, and the minimum was .17 with an average correlation of .32. All correlations were significant at the $p \leq .01$.

The Specific Positive and Specific Negative subscale follows:

Table 7. Intercorrelation of Specific Negative Subscales with Specific Positive Subscales

	SNA	SNK	SNE	SNP	SNV	SPA	SPK	SPE	SPP	SPV
SNA	1	.361(**)	.469(**)	.357(**)	.572(**)	.400(**)	.313(**)	.291(**)	.390(**)	0.094
SNK	.361(**)	1	.217(**)	0.099	.375(**)	.234(**)	.162(**)	.141(*)	.289(**)	0.05
SNE	.469(**)	.217(**)	1	.278(**)	.391(**)	.374(**)	.270(**)	.363(**)	.358(**)	0.051
SNP	.357(**)	0.099	.278(**)	1	.332(**)	.261(**)	.299(**)	.237(**)	.432(**)	.154(*)
SNV	.572(**)	.375(**)	.391(**)	.332(**)	1	.411(**)	.313(**)	.274(**)	.372(**)	.192(**)
SPA	.400(**)	.234(**)	.374(**)	.261(**)	.411(**)	1	.340(**)	.447(**)	.516(**)	.339(**)
SPK	.313(**)	.162(**)	.270(**)	.299(**)	.313(**)	.340(**)	1	.278(**)	.424(**)	0.09
SPE	.291(**)	.141(*)	.363(**)	.237(**)	.274(**)	.447(**)	.278(**)	1	.437(**)	.163(**)
SPP	.390(**)	.289(**)	.358(**)	.432(**)	.372(**)	.516(**)	.424(**)	.437(**)	1	.333(**)
SPV	0.094	0.05	0.051	.154(*)	.192(**)	.339(**)	0.09	.163(**)	.333(**)	1

The minimum correlation for the Specific Negative subscales was .10, and the maximum correlation was .57, with an average correlation of .35. The minimum correlation among the Specific Positive subscales was .10, while the maximum correlation was .52, with an average correlation of .34. All negative subscale correlations were significant at the $p \leq .05$. The maximum correlation for Specific Negative subscales with the Specific Positive subscales was .43, with a minimum correlation of .05, and an average correlation of .27. 19 out of 25 opposite correlations were significant at the $p \leq .01$, with one opposite correlation significant at the $p \leq .05$.

*Reliability Statistics*Table 8. Subscale Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Subscale Deleted
GNA	66.3582	156.912	.624	.577	.907
GPK	66.8619	178.022	.410	.347	.910
GNK	67.2724	166.851	.714	.568	.903
SNK	70.0970	179.279	.372	.277	.911
GNV	68.4739	165.636	.675	.582	.904
GPV	66.4888	163.509	.635	.522	.905
SNV	67.3694	165.193	.640	.526	.905
SPV	69.9366	180.022	.340	.248	.911
GNP	68.0448	164.770	.592	.536	.906
GPP	67.1940	170.164	.586	.484	.906
SNP	69.1082	176.981	.463	.339	.909
SPP	67.7649	164.735	.620	.579	.905
GPA	66.3507	169.532	.540	.440	.907
SNA	66.8769	162.138	.609	.557	.906
SPA	66.7388	162.201	.643	.556	.905
GNE	69.0672	173.037	.592	.426	.907
GPE	67.9963	173.697	.498	.383	.908
SNE	68.3806	169.218	.581	.423	.906
SPE	68.2537	173.089	.479	.387	.909
SPK	67.3843	171.773	.537	.363	.907

Table 8 contains the Cronbach alpha possible given the omission of a respective subscale. The overall Cronbach alpha of .91, Table 9, is greater than or equal to the Cronbach alpha achieved in Table 8 through item omission.

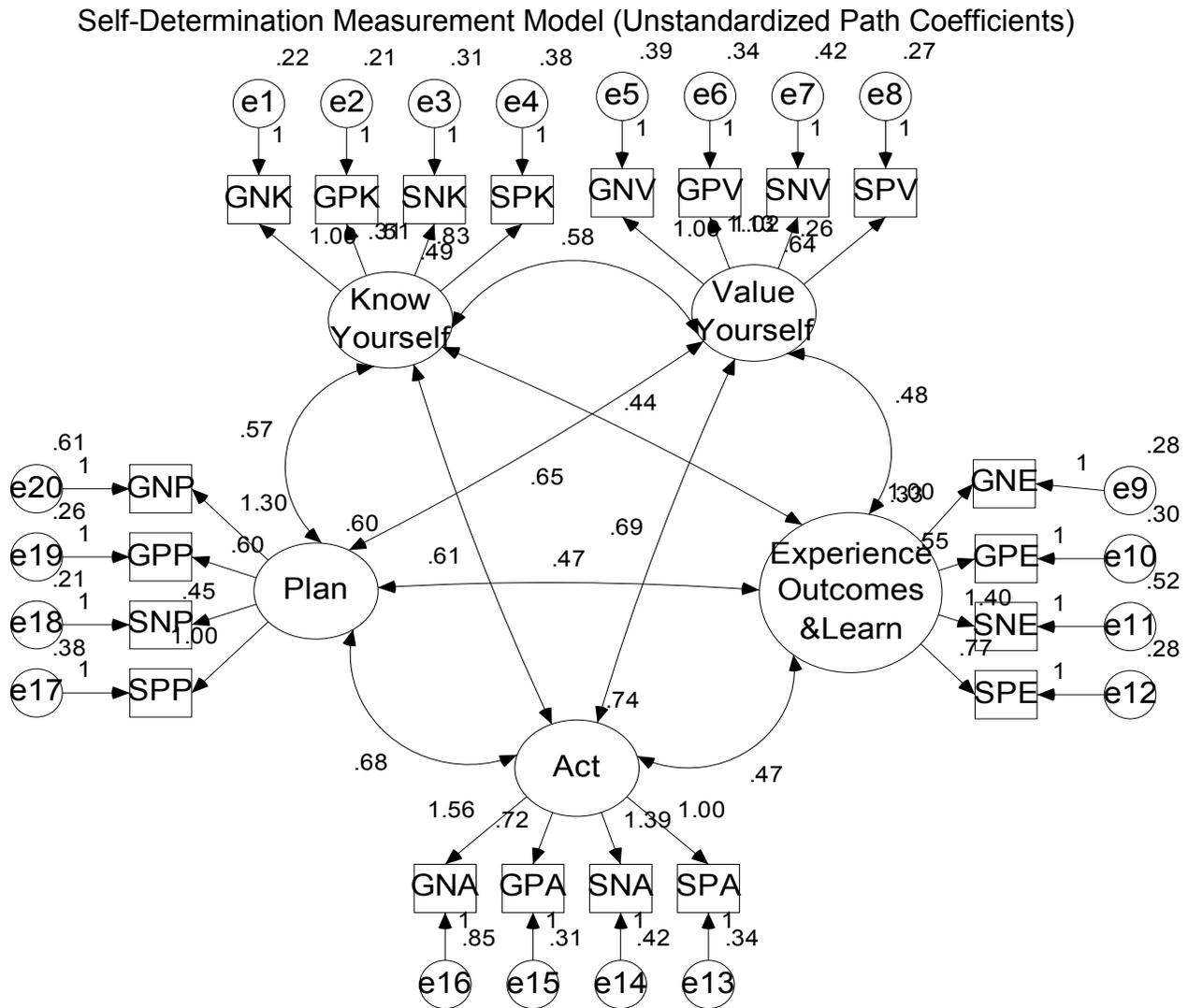
The Cronbach α for each individual subscale (following correction with SB) is greater than .91, and indicative of high levels of internal reliability.

Table 9. Cronbach's Alpha

N of Subscales	N of Items	Overall Cronbach's Alpha	
20	92	.911	
Subscales	Items	Cronbach Alpha	Spearman-Brown (SB)
GNK	5	.396	.983
GNV	4	.555	.991
GNP	5	.519	.990
GNA	7	.653	.994
GNE	3	.416	.984
GPK	5	.285	.973
GPV	6	.568	.991
GPP	5	.464	.987
GPA	6	.445	.986
GPE	4	.515	.989
SNK	2	.164	.947
SNV	5	.609	.993
SNP	3	.172	.950
SNA	6	.607	.993
SNE	4	.491	.988
SPK	5	.293	.974
SPV	2	.283	.973
SPP	5	.509	.989
SPA	6	.576	.992
SPE	4	.418	.985

Validity

Figure 4 - 2



The measurement model in Figure 4 - 2 was constructed from a raw data file containing summed values for each of the 20 observed variables. This model contains the unstandardized estimates. The measurement model is recursive and has no correlated measurement errors. The results that follow were obtained through the Asymptotically Distribution Free analysis.

Table 10. Regression Weights

		Estimate	S.E.	C.R.	P	Label
GNK	<--- Know Yourself	1.000				
GPK	<--- Know Yourself	.311	.027	11.718	***	par_1
SNK	<--- Know Yourself	.505	.028	17.729	***	par_2
SPK	<--- Know Yourself	.829	.048	17.198	***	par_3
GNV	<--- Value Yourself	1.000				
GPV	<--- Value Yourself	1.023	.047	21.770	***	par_4
SNV	<--- Value Yourself	1.129	.047	24.122	***	par_5
SPV	<--- Value Yourself	.256	.032	8.035	***	par_6
SPP	<--- Plan	1.000				
SNP	<--- Plan	.448	.025	17.836	***	par_7
GPP	<--- Plan	.600	.024	25.432	***	par_8
GNP	<--- Plan	1.305	.069	18.876	***	par_9
GNE	<--- Experience Outcomes &Learn	1.000				
GPE	<--- Experience Outcomes &Learn	.545	.048	11.286	***	par_10
SNE	<--- Experience Outcomes &Learn	1.403	.063	22.244	***	par_11
SPE	<--- Experience Outcomes &Learn	.768	.052	14.776	***	par_12
SPA	<--- Act	1.000				
SNA	<--- Act	1.392	.056	24.810	***	par_13
GPA	<--- Act	.723	.037	19.551	***	par_14
GNA	<--- Act	1.555	.068	22.916	***	par_15

Note. *** $p < .001$

Table 10 represents regression coefficients for the measurement model in Figure 4. All of the regression coefficients are significantly different from 0 at the $p \leq .0001$. An increase of 1 for Plan results in an increase of 1.305 for GNP. This pattern is consistent for the entire model.

Table 11, contains the standardized regression weights which reflects the anticipated change in the observed variable as a consequence of a 1 standard deviation change in the latent variable. If the value of Know Yourself increases by 1 standard deviation, GNK will increase .83 standard deviations above the mean, holding constant for GPK. The largest standardized regression weight is .88 (SNA), and represents an increase of .88 standard deviations above the mean for a 1 standard deviation increase

in Act, controlling for GPA . This increase is more than twice the magnitude of the increase precipitated by an increase in SPV, as a result of an increase in Value Yourself.

Table 11. Standardized Regression Weights

			Estimate
GNK	<---	Know Yourself	.829
GPK	<---	Know Yourself	.432
SNK	<---	Know Yourself	.538
SPK	<---	Know Yourself	.686
GNV	<---	Value Yourself	.789
GPV	<---	Value Yourself	.817
SNV	<---	Value Yourself	.814
SPV	<---	Value Yourself	.366
SPP	<---	Plan	.783
SNP	<---	Plan	.608
GPP	<---	Plan	.672
GNP	<---	Plan	.791
GNE	<---	Experience Outcomes & Learn	.734
GPE	<---	Experience Outcomes & Learn	.495
SNE	<---	Experience Outcomes & Learn	.744
SPE	<---	Experience Outcomes & Learn	.635
SPA	<---	Act	.826
SNA	<---	Act	.880
GPA	<---	Act	.743
GNA	<---	Act	.823

Table 12 contains the correlations between the exogenous variables and with the exception of Experience Outcomes and Learn; all of the correlations are equal to 1. This obviously indicates the SDM is not comprised of orthogonal or independent latent variables.

Table 12. Correlations

Know Yourself	<-->	Plan	1.056
Plan	<-->	Act	1.020
Experience Outcomes & Learn	<-->	Act	.957
Value Yourself	<-->	Experience Outcomes & Learn	1.044
Know Yourself	<-->	Value Yourself	1.033
Know Yourself	<-->	Act	1.013
Value Yourself	<-->	Act	1.009
Value Yourself	<-->	Plan	1.045
Know Yourself	<-->	Experience Outcomes & Learn	1.107
Plan	<-->	Experience Outcomes & Learn	1.055

Table 13 represents the covariance estimates between the exogenous variables. The covariance estimates between Act and Value Yourself is .70. This is a measure of the strength of the relationship between the standard deviation for Act and the standard deviation for Value yourself. The amount of variation between these two variables is important because it affects the degree to which the manifest variables vary together as well. The fact that all of the covariance estimates in Table 12 are significant at $p \leq .001$ corresponds to the high degree of correlation among these variables reflected in Table 12, and indicates the latent variables are not truly orthogonal.

Table 13. Covariances

			Estimate	S.E.	C.R.	P	Label
Know Yourself	<-->	Plan	.573	.033	17.291	***	par_16
Plan	<-->	Act	.676	.051	13.275	***	par_17
Experience Outcomes & Learn	<-->	Act	.468	.028	16.590	***	par_18
Value Yourself	<-->	Experience Outcomes & Learn	.478	.026	18.346	***	par_19
Know Yourself	<-->	Value Yourself	.582	.028	20.558	***	par_20
Know Yourself	<-->	Act	.611	.031	19.431	***	par_21
Value Yourself	<-->	Act	.694	.036	19.091	***	par_22
Value Yourself	<-->	Plan	.648	.036	17.998	***	par_23
Know Yourself	<-->	Experience Outcomes & Learn	.444	.021	21.656	***	par_24
Plan	<-->	Experience Outcomes & Learn	.465	.027	16.995	***	par_25

Note. *** $p < .001$

Table 14 contains the squared multiple correlations. In this table the largest value is GNK at .688. This is indicative of a good component fit, because 69% of the variance in GNK can be accounted for by the latent variable Know Yourself. The lowest squared multiple correlation is GPK at .187. This correlation indicates that the latent variable Know Yourself accounts for only 19% of the variance in GPK.

The number of small squared multiple correlations reflects that there is a poor relationship with the corresponding sub scales. Specifically, the latent variable Know Yourself accounted for less than 50% of the variance in three subscales (SPK, SNK, and GPK). There were similar weak squared correlations for the latent variables Plan (GPP, SNP), Value Yourself (SPV), Experience Outcomes and Learn (GPE).

Table 14. Squared Multiple Correlations

Subscale	Estimate
SNA	0.774
SNA	0.774
GNK	0.688
SPA	0.682
GNA	0.677
GPV	0.667
SNV	0.662
GNP	0.626
GNV	0.622
SPP	0.612
SNE	0.554
GPA	0.553
GNE	0.539
SPK	0.471
GPP	0.451
SPE	0.404
SNP	0.369
SNK	0.290
GPE	0.245
GPK	0.187
SPV	0.134

Model Fit Summary

The following fit indices will be employed as a measure of overall fit for the Self-Determination measurement model: Model Chi Square, Root Mean Square Residual (RMR), Goodness of Fit Index (GFI), Root Mean Square Error of Approximation (RMSEA).

First, Chi Square represented by CMIN, the value for the Chi Square is 1045 at $p \leq .001$. For this index the closer to 0, the better overall fit. In this particular case, the Chi Square is significantly inflated, and therefore not indicative of good fit. However, because Chi Square is sensitive to the size of the correlations, and sample size it often can lead to erroneous rejection of the measurement model. The normed chi-square (NC) accounts for sample size by dividing X^2_m/df_m , (3.3), although the rule of thumb for an acceptable ratio is 2 to 1, or 3 to 1 (Carmines and Mclver, 1981).

The Root Mean Square (RMR) residual is equated with a good fit at proximity of 0. The RMR for the SDM was .2, and not sufficiently close enough to zero to equate with good fit. The Goodness of Fit Index (GFI) is generally viewed as a perfect indicator of fit at 1.0, while values in excess of .90 may indicate a good fit (Kline, 2005). The GFI for the SDM was .95 and indicative of a good fit.

The next index is the RMSEA which is indicative of a perfect fit at 0. A good fit at $\leq .05$, and a close fit, and between .05 and .08, a reasonable fit, and values less than .10 a poor fit (Browne & Cudeck, 1993). Table 18 contains a RMSEA of .065 with the 90% confidence interval .06-.07, and falls within the range of a reasonable error of approximation.

In summary, two model fit indices equated with good or fair model fit for the SDM, RMSEA and GFI. Conversely, two model fit indices also equated with less than good fit for the SDM, RMS and Chi Square. These mixed results do not constitute good overall model fit between the sample and population data.

Expert Opinion

A supplement to the foregoing quantitative analysis of the data follows and includes comments by juvenile justice professionals regarding the merits of employing the “*Student Self-Determination Survey*” with an incarcerated juvenile delinquent population:

Julie Jenkins, Bureau of Juvenile Justice Reintegration Director, described the population served by the bureau as impulsive, easily frustrated, pessimistic and oriented towards immediate gratification. She indicated based upon the instrument design to discern between negative and positive aspects of self-determination, she viewed the SDSS as being applicable to our youth.

Robert Gariepy, Treatment Program Manager for the Shawono Treatment and Detention Center serving Northern Michigan indicated he believed the SDSS would be valid for use with a juvenile justice population. He added that these youth exhibit many of the negative dimensions captured within the subscales of this instrument.

William Cunningham, Trainer for the Northern Michigan region reviewed the SDSS and indicated in his opinion this survey would be ideally suited for our population as they manifest so many of the behaviors covered by this instrument. In particular, dimensions such as plan, act and experience outcomes and learn, are areas our youth are far more likely than non-delinquent youth to be deficit in.

CHAPTER 5

Discussion and Conclusions

Discussion

The intent of this study was to explore the reliability and validity of the Self-Determination Model (SDM), as espoused by the “*Self Determination Student Scale (SDSS)*” with an adjudicated incarcerated delinquent population in state operated residential juvenile treatment centers. The results of the analysis confirmed the instrument’s internal consistency; Cronbach Alpha (α) was .91. The fit indices left as tenable the notion of overall model fit, but two of the four indices were not indicative of good model fit. This indicates some revision is warranted either to the model, or more likely, to the “*SDSS.*”

The overall model fit is derived from interpreting the results of several fit indices, rather than any one single fit index. This is because there is no universally accepted measure of model fit. Consequently, there are several generally accepted measures of model fit, RMSEA, GFI and RMR. The X^2_m fit index did not reflect a good fit at 1045, but the modification to the X^2 was considerably closer to de facto standards. Similarly the RMR (root mean square residual) index was approximately .2, and also not indicative of a good fit

The purpose of this study was to demonstrate that the *SDSS* was a reliable and valid measure of self-determination for adjudicated delinquent youth. The reliability of this instrument was confirmed with high levels of Cronbach Alpha. The Confirmatory Factor Analysis offered left as tenable that there was limited support for a measurement model that could be equated with good fit.

Overall model fit is but a broad measure of construct validity; however, parameter estimates reflect the individual correlations that when linked together provide the framework for the construct, Self-Determination. The quality of the interrelationship between variables within the model is reflected by regression estimates. The regression estimates, reflect the quality or strength of the relationship between the observed and the expected variables, while the covariances reflect the predictive capabilities of the overall model. The SDM parameter estimates for several observed variables (subscales) was not sufficiently strong to substantiate that the parameter estimates were sound.

All the regression estimates of the subscales were significant at the $p \leq .001$ and reflect the strength of the relationship between the latent variable and the observed variables. The covariance estimates were all significant at the $p \leq .001$; however in this instance this is indicative that the latent variables are not truly independent or orthogonal. This blending of the latent variables also means the predictive qualities of the model are severely limited. Similarly, several of the squared multiple correlations were sufficiently weak as to raise alarm as to the small percentage of variance accounted for by the latent variables in these instances.

Overall, the disturbances within the model (non-independent latent variables) contributed to the SDM's less than adequate fit. In summary, the CFA did not substantiate that the SDM was a highly valid model to represent the construct of self-determination for this population.

Implications

The implications of these findings are important for future research because the SDM was not confirmed as a valid representation of the self-determination construct

among adjudicated delinquent youth incarcerated in state training schools. Future research efforts that explored some of the factors behind several of the covariances amongst the latent variables and the corresponding disturbance this causes within the model would be a logical extension of this study. For this population, it may be that some of the items on the “SDSS” might benefit from revision.

Similarly, because the majority of the squared multiple correlations were high, or at the least superior to chance, ($> 50\%$), it again may be necessary for a revision of some items on the “SDSS” pertaining to the subscales with inferior correlations ($< 50\%$) to ensure the desired information is captured. It is beyond the scope of this study to suggest specific recommendations for revisions, but this would seem to be a viable area for future research efforts.

In a previous study involving a population of secondary students from a public school, the SDSS was found to be a valid measure for the construct of self-determination Field, Hoffman and Sawilowsky (1995). Future research efforts might explore a direct comparison between the two different populations (mainstream youth and adjudicated incarcerated delinquent youth).

Because this study only explored the population of adjudicated incarcerated delinquent youth in state operated training schools, the sample size was not sufficiently large enough to conduct a multiple group model. This study could be expanded to include incarcerated juvenile delinquents from private child caring agencies to make a multiple group model feasible.

The connection between self-determination and academic achievement data is another potential area for future research efforts. Plans are underway to have public

and private juvenile justice residential treatment facilities adopt a common academic achievement test for use across their educational programs. This action would significantly increase the number of youth in state juvenile justice residential treatment facilities with valid academic achievement data.

Conclusion

In summary this study found that the “SDSS” was a reliable measure with a population of adjudicated incarcerated delinquent youth. The fact that a high level of construct validity was not achieved via confirmatory factor analysis in this study indicates the “SDSS” requires some revision prior to using it with incarcerated youth. There were promising results, however, to suggest with some minor modifications to the subscales and related items, construct validity can be achieved in future research studies.

Appendix A

Age Norms Major Scales

Age		Act	Know	Plan	Value	Experience	"SDSS"
13	N	3	3	3	3	3	3
	Mean	17.00	12.33	13.33	9.67	9.33	61.67
	Std. Deviation	1.732	2.309	2.082	2.887	1.528	9.018
14	N	7	7	7	7	7	7
	Mean	18.43	11.86	12.43	10.71	10.86	64.29
	Std. Deviation	4.756	2.854	3.780	4.424	4.337	18.607
15	N	31	31	31	31	31	31
	Mean	18.42	13.13	12.94	12.48	12.23	69.19
	Std. Deviation	3.668	1.784	3.151	1.998	2.895	10.722
16	N	62	62	62	62	62	62
	Mean	18.34	12.97	13.34	12.15	12.18	68.97
	Std. Deviation	4.368	2.592	3.525	3.182	3.201	14.685
17	N	73	73	73	73	73	73
	Mean	19.45	13.10	13.60	12.68	13.34	72.18
	Std. Deviation	4.416	2.631	3.620	2.939	2.393	14.168
18	N	48	48	48	48	48	48
	Mean	19.48	13.33	14.83	13.25	12.75	73.65
	Std. Deviation	3.930	2.244	2.890	2.547	3.139	12.900
19	N	22	22	22	22	22	22
	Mean	20.41	13.64	14.95	13.95	13.77	76.73
	Std. Deviation	3.634	1.329	3.109	1.889	1.688	9.280
20	N	16	16	16	16	16	16
	Mean	17.63	13.50	13.37	12.19	10.94	67.62
	Std. Deviation	4.911	2.033	3.462	3.229	3.065	15.196
21	N	6	6	6	6	6	6
	Mean	21.00	14.83	17.33	14.67	15.00	82.83
	Std. Deviation	3.795	1.169	1.862	1.506	1.265	8.909
Total	N	268	268	268	268	268	268
	Mean	19.03	13.18	13.83	12.67	12.66	71.37
	Std. Deviation	4.207	2.328	3.406	2.866	2.933	13.666

Gender Norms Major Scales

GENDER		Act	Know	Plan	Value	Experience	"SDSS"
Female	N	65	65	65	65	65	65
	Mean	18.46	13.34	13.95	12.42	12.69	14.172
	Std. Deviation	4.139	2.123	2.997	2.657	2.761	2.9354
Male	N	203	203	203	203	203	203
	Mean	19.21	13.13	13.79	12.75	12.65	14.306
	Std. Deviation	4.223	2.393	3.533	2.931	2.992	3.2144
Total	N	268	268	268	268	268	268
	Mean	19.03	13.18	13.83	12.67	12.66	14.274
	Std. Deviation	4.207	2.328	3.406	2.866	2.933	3.148

Appendix B

Gender Norms General Sub Scales

GENDER		GNK	GPK	GNV	GPV	GNP	GPP	GPA	GNE	GPE	GNA
Female	N	65	65	65	65	65	65	65	65	65	65
	Mean	4.14	4.45	2.75	4.91	3.17	4.26	4.95	2.17	3.38	4.74
	Std. Deviation	0.827	0.708	1.016	1.208	1.18	0.923	1.124	0.802	0.896	1.574
Male	N	203	203	203	203	203	203	203	203	203	203
	Mean	4.08	4.53	2.94	4.87	3.37	4.15	5.04	2.34	3.37	5.1
	Std. Deviation	1.08	0.76	1.176	1.362	1.374	1.047	1.138	0.844	0.942	1.758
Total	N	268	268	268	268	268	268	268	268	268	268
	Mean	4.1	4.51	2.9	4.88	3.32	4.18	5.02	2.3	3.37	5.01
	Std. Deviation	1.023	0.747	1.14	1.324	1.331	1.018	1.133	0.836	0.93	1.719

Gender Norms Specific Sub Scales

GENDER		SNK	SPK	SNV	SPV	SNP	SPP	SPA	SNE	SPE	SNA
Female	N	65	65	65	65	65	65	65	65	65	65
	Mean	1.25	4.14	3.94	1.38	2.29	3.69	4.57	2.98	3.32	4.37
	Std. Deviation	.708	.966	1.261	.700	.655	1.185	1.447	1.097	.868	1.496
Male	N	203	203	203	203	203	203	203	203	203	203
	Mean	1.28	3.94	4.02	1.45	2.25	3.58	4.65	2.99	3.05	4.53
	Std. Deviation	.700	1.000	1.210	.683	.778	1.312	1.365	1.081	1.038	1.439
Total	N	268	268	268	268	268	268	268	268	268	268
	Mean	1.27	3.99	4.00	1.43	2.26	3.60	4.63	2.99	3.12	4.49
	Std. Deviation	.701	.994	1.221	.686	.749	1.281	1.383	1.083	1.005	1.452

Age Norms General Sub Scales

Age		GNK	GNV	GPV	GPK	GNP	GPP	GPA	GNE	GPE	GNA
13	N	3	3	3	3	3	3	3	3	3	3
	Mean	3.33	1.67	5.00	4.33	2.67	4.33	5.00	1.67	3.33	4.33
	Std. Deviation	.577	.577	1.732	1.155	.577	1.155	1.000	.577	.577	1.528
14	N	7	7	7	7	7	7	7	7	7	7
	Mean	3.14	1.86	4.14	4.14	2.43	3.57	5.00	1.57	3.00	4.29
	Std. Deviation	1.574	1.773	1.864	.900	1.618	1.272	1.528	1.272	1.528	2.430
15	N	31	31	31	31	31	31	31	31	31	31
	Mean	4.10	2.87	4.87	4.55	3.26	3.84	4.94	2.13	3.19	5.13
	Std. Deviation	.944	.957	.991	.768	1.316	1.128	1.153	.806	1.046	1.648
16	N	62	62	62	62	62	62	62	62	62	62
	Mean	4.00	2.81	4.66	4.44	3.10	4.16	5.02	2.26	3.15	4.74
	Std. Deviation	1.040	1.128	1.470	.738	1.224	1.027	1.138	.867	1.129	1.783
17	N	73	73	73	73	73	73	73	73	73	73
	Mean	4.05	2.90	4.85	4.58	3.16	4.18	5.12	2.36	3.45	5.05
	Std. Deviation	1.153	1.204	1.431	.686	1.414	.991	1.053	.788	.851	1.794
18	N	48	48	48	48	48	48	48	48	48	48
	Mean	4.23	3.06	5.10	4.42	3.85	4.19	4.98	2.50	3.52	5.27
	Std. Deviation	.905	.954	1.242	.919	1.072	1.123	1.246	.772	.772	1.484
19	N	22	22	22	22	22	22	22	22	22	22
	Mean	4.50	3.36	5.18	4.55	3.59	4.55	5.36	2.50	3.73	5.18
	Std. Deviation	.598	.848	.958	.671	1.403	.596	1.002	.598	.456	1.468
20	N	16	16	16	16	16	16	16	16	16	16
	Mean	4.06	2.50	4.75	4.69	3.13	4.31	4.50	1.94	3.31	4.81
	Std. Deviation	.929	1.461	1.238	.479	1.500	.873	1.155	1.063	.793	2.007
21	N	6	6	6	6	6	6	6	6	6	6
	Mean	4.67	3.67	5.83	4.83	4.67	4.83	4.67	2.83	3.83	5.67
	Std. Deviation	.516	.816	.408	.408	.516	.408	1.033	.408	.408	1.751
Total	N	268	268	268	268	268	268	268	268	268	268
	Mean	4.10	2.90	4.88	4.51	3.32	4.18	5.02	2.30	3.37	5.01
	Std. Deviation	1.023	1.140	1.324	.747	1.331	1.018	1.133	.836	.930	1.719

Age Norms Specific Sub Scales

Age		SNK	SNV	SPV	SPK	SNP	SPP	SPA	SNE	SPE	SNA
13	N	3	3	3	3	3	3	3	3	3	3
	Mean	1.33	2.00	1.33	4.33	2.00	4.00	4.00	1.67	2.33	3.00
	Std. Deviation	.577	2.000	.577	.577	.000	1.732	1.732	1.528	.577	.000
14	N	7	7	7	7	7	7	7	7	7	7
	Mean	1.14	3.57	1.43	4.00	2.29	4.14	4.71	2.43	3.14	4.29
	Std. Deviation	.900	1.813	.787	1.155	.488	1.069	1.254	1.718	.378	1.380
15	N	31	31	31	31	31	31	31	31	31	31
	Mean	1.29	3.97	1.26	3.90	2.10	3.16	4.35	3.03	3.06	4.19
	Std. Deviation	.588	1.110	.729	1.106	.700	1.393	1.644	.983	1.181	1.327
16	N	62	62	62	62	62	62	62	62	62	62
	Mean	1.13	3.85	1.37	4.02	2.31	3.39	4.26	2.92	3.03	4.37
	Std. Deviation	.735	1.266	.707	1.048	.737	1.323	1.413	1.164	1.055	1.440
17	N	73	73	73	73	73	73	73	73	73	73
	Mean	1.22	4.00	1.42	3.93	2.21	3.67	4.84	3.16	3.41	4.60
	Std. Deviation	.731	1.190	.686	.991	.865	1.281	1.280	.913	.761	1.631
18	N	48	48	48	48	48	48	48	48	48	48
	Mean	1.46	4.17	1.58	3.90	2.37	3.81	4.81	2.92	2.94	4.56
	Std. Deviation	.582	1.098	.647	1.036	.703	1.232	1.394	1.127	1.156	1.335
19	N	22	22	22	22	22	22	22	22	22	22
	Mean	1.32	4.36	1.59	4.00	2.32	3.95	5.05	3.32	3.23	5.09
	Std. Deviation	.780	.953	.666	.873	.780	1.046	1.046	.839	.869	1.151
20	N	16	16	16	16	16	16	16	16	16	16
	Mean	1.19	3.94	1.38	4.31	2.25	3.37	4.19	2.44	2.44	4.13
	Std. Deviation	.750	1.526	.719	.793	.577	1.258	1.328	1.209	1.031	1.586
21	N	6	6	6	6	6	6	6	6	6	6
	Mean	2.00	4.67	1.50	4.33	2.33	4.17	5.83	3.50	3.83	5.17
	Std. Deviation	.000	.516	.548	.516	.816	.983	.408	.837	.408	1.169
Total	N	268	268	268	268	268	268	268	268	268	268
	Mean	1.27	4.00	1.43	3.99	2.26	3.60	4.63	2.99	3.12	4.49
	Std. Deviation	.701	1.221	.686	.994	.749	1.281	1.383	1.083	1.005	1.452

Appendix C

*“SDSS” Sub Scales and Related Items

GNK	GNV	GNP	GNA	GNE
7	9	10	20	21
8	17	18	29	32
16	27	28	30	60
26	36	37	31	
62		86	38	
			59	
			69	
GPK	GPV	GPP	GPA	GPE
1	11	4	13	6
2	40	12	23	25
3	41	50	24	80
19	47	51	34	87
39	49	73	68	
	52		78	
SNK	SNV	SNP	SNA	SNE
	64	14	55	44
57	5	15	81	53
79	48	35	82	84
	66		83	91
	67		88	
			89	
SPK	SPV	SPP	SPA	SPE
22	42	43	74	46
33	72	54	45	70
61		63	56	76
71		85	58	65
77		92	75	
			90	

*Note: To obtain a copy of the actual “SDSS” scale, contact:

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ABSTRACT

RELIABILITY AND VALIDITY OF THE “*SELF-DETERMINATION STUDENT SCALE*”
WITH AN ADJUDICATED INCARCERATED DELINQUENT POPULATION

by

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Major: Research And Evaluation

Degree: Doctor of Education

The purpose of this study was to determine the reliability and validity of the “*Self-Determination Student Scale*” (“*SDSS*”), with an adjudicated and incarcerated delinquent youth population in state operated medium, closed and high secure juvenile delinquent treatment facilities. The research design was ex post facto, and the data was derived from secondary data obtained from a Bureau of Juvenile Justice transition planning study.

The underlying data for this study consisted of scores on of scores on the “*Self-Determination Student Survey*” (“*SDSS*”), (N=268). The “*SDSS*” is a 92 item student response instruments that provides both an affective and cognitive domain. The primary scale yields scores pertaining to the construct of self-determination. Specifically, students are assessed on the following: the degree to which they possess self-awareness, self-esteem, planning abilities, a willingness to take action, and insight into the consequences of their experiences.

The statistical analysis included a Cronbach Alpha to determine the reliability of the instrument and a Confirmatory Factor Analysis to validate the construct validity of the “SDSS.” The findings substantiated the “SDSS” as a reliable measure for this sample of youth residents of juvenile justice residential treatment centers. Construct validity was not achieved, primarily as a result of non-independence among the latent variables.

Several of the subscales were found to have a high degree of correlation with the latent variables despite the model’s shortcoming. This holds promise for future research efforts involving a revision of this instrument with adjudicated incarcerated delinquent youth in state training schools.

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