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Trends in Intellectual Disability Identification in West Virginia

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TRENDS IN INTELLECTUAL DISABILITY IDENTIFICATION IN WEST VIRGINIA

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TABLE OF CONTENTS

LIST OF TABLES

ABSTRACT

The purpose of this study was to examine the prevalence of Intellectual Disability (ID) in each of West Virginia's Local Educational Agencies (LEAs). Publicly available enrollment and disability counts were aggregated and used to calculate an administrative prevalence rate for each LEA annually, from 2004 to 2013. Prevalence was examined within and between LEAs, as well as between regions. The results indicate a decrease in the administrative prevalence of ID in 50 of 55 LEAs over the 10 years examined. Rates within LEAs varied between years. Additionally, school-based prevalence varied between RESAs, with RESA I and RESA VIII exhibiting the most frequent significant differences. Although size did not impact prevalence when examined as a categorical variable, a weak correlation was found when analyzing prevalence rates and actual district total enrollment as ratio measures.

CHAPTER 1

LITERATURE REVIEW

Overview

One of the primary services provided by school psychologists is the comprehensive evaluation of a student's cognitive ability, academic achievement, behavior, and/or adaptive functioning. School psychologists are also typically members of the committee that convenes to determine a student's eligibility for special education. These two roles require school psychologists to note trends in both assessment and eligibility. This thesis examines local trends in eligibility that may be related to assessment, making it doubly applicable to school psychologists.

Students are made eligible for special education services by utilizing a variety of data sources, and this data generally includes at least one standardized assessment. Because the scores reported on standardized assessments are transformed into Standard Scores with a specified mean and standard deviation, we can expect a certain percentage of students to fall within a band of test scores (Sattler, 2008). When considering scores that are greater than or equal to two standard deviations away from the mean in a regular distribution, we can expect approximately two percent of students to fall in the upper extreme and approximately two percent to fall in the lower extreme. In reality, identification rates may be widely varied. As such, when students are identified at a higher than typical rate, across a generalized area, there is need for inquiry. Currently, West Virginia is only one of two states that reports a school-based prevalence rate of Intellectual Disability (ID) in excess of 2.0% (Polloway, Lubin, Smith, & Patton, 2010). Because ID affects placement for students, frequently resulting in a more restrictive educational

environment, and because it is being identified at a higher than expected rate, it is necessary to examine the prevalence of ID in the state over time for possible trends (Polloway et al., 2010).

Defining Intellectual Disability

ID is a disorder that affects individuals around the world, yet there is little consistency in what we consider an Intellectual Disability to be. From diagnostic methods to nomenclature, there is great variation globally (Schalock and Luckasson, 2004). To clarify the nature of the disability for the purpose of this research, it is necessary to consider potential alternative names, diagnostic practices, and the history of the disability.

Nomenclature. Representative of the lack of consistent terminology, the World Health Organization (WHO) identified eight common terms currently used to describe ID internationally, including ID, Developmental Disability, Learning Disability, Mental Deficiency, Mental Disability, Mental Handicap, Mental Retardation (MR), and Mental Subnormality (2007). While ID is more commonly used in high-income countries, MR remains the most widely used term internationally (WHO, 2007). Within the United States, both MR and ID were reported as the terms most commonly used (WHO, 2007). In addition to MR and ID, the following terms were all in use by different states in America at the same time as the WHO report: Mental Disability or Impairment, Intellectual Impairment, Mental Handicap, and Learning Impairment (Polloway, Patton, Smith, Lubin, & Antoine, 2009). Variation in terminology can be confusing for service providers, individuals with ID and their families, and educational agencies.

Diagnostic Methods. Diagnostic methods are also varied between countries. The most frequently used methods to classify or diagnose ID include the International Classification of Diseases (ICF), Diagnostic and Statistic Manual of Mental Health Disorders (DSM)-IV, and the

professional opinion of health care providers (WHO, 2007). The WHO identified the DSM-IV as the primary instrument used to diagnose ID in the United States at the time of the study (2007). Because the DSM-IV is the most commonly used method to identify ID in America and this study examines the occurrence of ID in this county, the definition presented by the DSM will be considered.

Current Diagnostic Criteria. The current Diagnostic and Statistical Manual of Mental Disorders (5th ed.; DSM–5; American Psychiatric Association, 2013) states that a diagnosis of ID requires an impairment of mental abilities that begins during the developmental period and impacts adaptive functioning in at least one domain.

The DSM-5 requires clinicians to consider both adaptive and intellectual abilities when considering ID as a diagnosis, and as such, includes impaired intellectual functioning in the description of the disorder, rather than requiring a certain score as diagnostic criteria (American Psychiatric Association, 2013). Still, when considering intellectual ability, the DSM-5 suggests limiting identification to those individuals whose overall ability is at least two standard deviations below the mean, or a Standard Score of 70 or below (American Psychiatric Association, 2013). When considering adaptive functioning, the DSM-5 requires impairment significant enough to mandate continued support in one of the three domains, which are conceptual, social, or practical (American Psychiatric Association, 2013). The DSM-5 also encourages clinicians to use clinical evaluation in addition to standardized measures, such as questionnaires or interviews, when considering the level of adaptive impairment (American Psychiatric Association, 2013).

Recent Diagnostic Criteria. Prior to the publication of the DSM-5, the Diagnostic and Statistical Manual of Mental Disorders (4th ed., text rev.; DSM–IV–TR; American Psychiatric

Association, 2000) was used to diagnose ID. Both the terminology for the disorder and diagnostic criteria presented in the DSM-IV-TR differ the DSM-5. The DSM-IV-TR called the disability MR rather than ID (American Psychiatric Association, 2000). The DSM-IV-TR stipulated that a significantly subaverage Intellectual Quotient (IQ), or one that is below 70, was a diagnostic criteria (American Psychiatric Association, 2000). Additionally, the DSM-IV-TR required impaired functioning in two of the ten adaptive skill areas, rather than in one of three domains, indicated by a Standard Score at least two standard deviations below the mean (American Psychiatric Association, 2000). These impairments, both intellectual and adaptive, were not required to manifest during the developmental period, signifying another significant difference from the current revision (American Psychiatric Association, 2000).

Adoption of Intellectual Disability

The use of ID as a term to describe this disability is relatively new. Indeed, only the most recently updated edition of the DSM, the DSM-5, has adopted this terminology, while the DSM-IV-TR identified the disorder as Mental Retardation and was in wide use until 2013 (American Psychiatric Association, 2000). Previous versions of the DSM have used varying nomenclature. In the first edition of the DSM, the disorder was identified as Mental Deficiency (American Psychiatric Association, 1952). MR first appeared in the DSM-II, and was the default terminology until the DSM-5 (American Psychiatric Association, 1968).

However, the DSM-5 was hardly the first publication, nor the APA the first organization, to adopt ID as a replacement for MR. The DSM is the standard diagnostic reference in the United States, but organizations can act autonomously when developing definitions or updating terminology for disabilities, and many did. Some groups adopted ID 10

years in advance of the publication of the DSM-5, while some case law did not reflect a shift in the disability's name until 2014, after the publication of the DSM-5.

Use by Organizations. The President's Committee for People with Intellectual Disabilities, formerly the President's Committee on Mental Retardation, updated its terminology in 2003 (Department of Health and Human Resources). While recognizing the thirteenth anniversary of the Americans with Disabilities Act, President George W. Bush amended the original executive order to reflect emerging terminology (Department of Health and Human Resources, 2003). The transition to ID from MR by the President's Committee for People with Intellectual Disabilities occurred ten years prior to the publication of the DSM-5, and several years prior to another appearance on a national level.

The American Association on Mental Retardation (AAMR) changed its name to the American Association on Intellectual and Developmental Disabilities (AAIDD) in 2007 (Schalock et al., 2007). However, the tenth edition of a best practice manual published by the AAIDD in the same year was titled "Mental Retardation: Definition, Classification, and Systems of Supports" (Schalock et al., 2007). This discrepancy highlights inconsistent application of then-emerging terminology, even within an organization.

Updated Laws. Prior to the publication of the DSM-5 in 2013, several federal and state laws were passed that required the systematic adoption of the term "Intellectual Disability." In 2010, the Congress of the United States of America passed Rosa's Law, which required "Mental Retardation" and "MR" to be replaced by "Intellectual Disability" and "ID" in the Higher Education Act of 1965, the Individuals with Disabilities Education Improvement Act, Rehabilitation Act of 1973, Health Research and Health Services Amendments of 1976, and the Public Health Service Act, as well as in various laws related to research (United States, 2010).

Through Rosa's Law, Congress suggested states also transition to current terminology (United States, 2010). Although not required under Rosa's Law, the Social Security Administration replaced "Mental Retardation" with "Intellectual Disability" as a disability category for both adults and children (Social Security Administration, 2013).

To make fair and appropriate verdicts and sentencing decisions, the criminal justice system requires a clear operational definition and standardized terminology for ID, particularly when considering offenders who may be eligible for the death penalty. Despite this, until recently case law was marked by inconsistent and outdated terminology, misunderstanding of test error, and exclusion of crucial diagnostic criteria (Olley, 2013). Reflecting the changing profession opinion regarding the disability, the Supreme Court of The United States of America replaced MR with ID while deliberating ID in regards to capital punishment (Hall v. Florida, 2014). Additionally, Hall v. Florida established guidelines for the consideration of Standard Error of Measure (SEM) and adaptive skills deficits. The court held that additional evidence must be presented if an IQ score is between 70-75; particularly, adaptive information should be given equal consideration in these cases (Hall v Florida, 2014).

Educational Definition of Intellectual Disability

National Standards. MR is one of the categories of exceptionalities in which children may qualify for special education and related services under the Individuals with Disabilities Education Act (U.S. Department of Education, 2004). IDEA defines MR as "significantly subaverage general intellectual functioning, existing concurrently with deficits in adaptive behavior and manifested during the developmental period, that adversely affects a child's educational performance" (2006, p. 46756). This definition is broad, leaving diagnostic criteria and methodology to the discretion of individual states. Because IDEA is flexible, it is

unsurprising that variation exists between states. In 2006, there were over 10 official terms being used by educational agencies to describe ID and adaptive behavior was not a required diagnostic criterion in some states (Polloway et al., 2009). There was also little consistency in how states chose to quantify impaired intellectual ability: some states did not have a cut-off score, others required a Standard Score at least two standard deviations below the mean, several required a specific Standard Score, and one state indicated the cut off was 1.5 standard deviations below the mean (Polloway et al., 2009).

The Office of Special Programs (OSEP) flatly denied requests to change MR to ID received during the comments period of IDEA's revision. In response, OSEP reasoned continued use of MR was appropriate because Section 602(3)(a) of the Individuals with Disabilities Education Improvement Act of 2004 uses MR rather than ID (U.S. Department of Education, 2006, p. 46550). Continued use of MR in IDEA lead to concern regarding whether choosing to use ID (or another alternative term) could impact funding received by an educational agency. In a policy letter addressing this concern, OSEP responded that states could choose terminology, as long as any changes are subject to public hearings and comment periods, all eligible students receive a free and appropriate public education (FAPE), and states using the term provide the correct counts for each disability category (2006). The ability of states to choose terminology and functionally similar definitions, providing all children who would be identified as MR receive FAPE, was also emphasized while justifying the use of MR in IDEA's revision (U.S. Department of Education, 2006).

When Rosa's Law mandated the transition from MR to ID in Section 602(3)(a) specifically, OSEP promptly changed terminology. In the 29th Annual Report to Congress on the Implementation of IDEA, it was noted "the U.S. Department of Education will refer to the

disability subcategory ‘intellectual disabilities’ rather than ‘mental retardation’ in the 30th Annual Report to Congress and all subsequent annual reports” (U.S. Department of Education, 2010). Although the change was noted in the report in 2010, many online documents have not been updated to provide continuity, and MR remains the terminology present in IDEA as displayed on the Electronic Code of Federal Regulations (IDEA, 2006).

State Standards. In West Virginia, the definition and terminology for ID has changed throughout the past ten years. The legislation which outlines the evaluation and identification process for special education and related services in West Virginia is the West Virginia Board of Education Policy 2419: *Regulations for the Education of Exceptional Students (WVBE Policy 2419).*

In the 2004 revision of WVBE Policy 2419, Mental Impairment was defined as “significantly subaverage intellectual functioning existing concurrently with related limitations in two or more […] adaptive skill areas,” occurring before age 18. For the purposes of evaluation, a specific IQ cutoff was set as a standard score not exceeding 75 (West Virginia, 2004, p. 15-6).

In the 2009 revision of WVBE Policy 2419, the terminology remained Mental Impairment, but the definition became more specific. While the adaptive skills and age requirements remained unaltered, educational impact and need for special education were added as criteria for identification, and Mental Impairment was further divided into two categories (West Virginia, 2009, p. 27). Mild to Moderate Mental Impairment was defined as having an IQ 2-3 standard deviations below the mean, while Moderate to Severe Mental Impairment was defined as having an IQ more than 3 standard deviations below the mean, with an allowance of 1 standard error of measurement (West Virginia, 2009, p. 27). Additionally, the criteria urged

evaluation teams to consider a student's cultural or linguistic background when considering identifying Mental Impairment (West Virginia, 2009, p. 27).

When revised again in 2012, WVBE Policy 2419's definition remained consistent with that established in the 2009 revision of WVBE Policy 2419. Although the definition was unchanged, terminology used to describe the category was updated from "Mental Impairment" to "Intellectual Disability" (West Virginia, 2012, p. 28-9).

When updated in 2014, WVBE Policy 2419 did not change its definition to reflect the new diagnostic standards established in the DSM-5. Although the criteria of intellectual ability that is two standard deviations below the mean is consistent with the DSM-5, when considering adaptive behavior, the DSM-5 requires at least one of three domains to be significantly impaired, while WVBE Policy 2419 still requires significant adaptive impairment to be from two of the eleven areas (American Psychiatric Association, 2013; West Virginia, 2014).

Prevalence of Intellectual Disability

Research examining the prevalence of ID reveals varying rates and varying methodology. Differing diagnostic methods and definitions have led to inconsistent prevalence rates around the world (Schalock and Luckasson, 2004). The prevalence of ID reported from international studies varies from 0.3% to 1.4% in children and 0.3% to 0.6% in adults (Maulik, 2010). The most commonly used strategies to calculate prevalence of Intellectual Disabilities include administrative prevalence estimates and population-based surveys (Larson et al., 2001).

Administrative Prevalence Rates. Due to the ease of using existing data, administrative prevalence is one of the most frequently used methods to calculate the approximate prevalence of ID for both children and adults (Larson et al., 2001). To estimate administrative prevalence, researchers consider all individuals qualifying for services at schools or agencies (Larson et al.,

2001). One significant limitation of using the administrative prevalence methodology to estimate prevalence is the likelihood of underestimation due to individuals not receiving services (Larson et al., 2001). Despite the limitations, administrative studies yield similar prevalence rates to clinical studies and allow you to look at large samples over time (Chapman, Scott, & Stanton-Chapman, 2008). Using a population-based administrative prevalence study, Murphy et al. estimates the prevalence for ID to be 1.2% of 10-year-olds (1995).

Population-Based Prevalence Rates. Population-based surveys, in which random samples of people from each region are interviewed, are also commonly used to estimate prevalence of disabilities and diseases; this method yields a sample that represents the total population surveyed, and are refused by very few people contacted (Larson et al., 2001). Several studies have examined the prevalence rate of ID using population-based surveys. Larson et al. (2001) examined the 1994-1995 National Health Interview Survey (NHIS) Disability Supplements, and found approximately 0.78% of individuals in the general population were ID. Boyle et al. (2011) examined the NHIS results from 1997-2008, estimating a prevalence rate of 0.71%, a lower rate than found in other studies.

Prevalence of ID by Severity. Variance in prevalence rates remains large when classifying children by the severity of impairment. In a population-based, administrative prevalence study of 12-to-14-year-old Florida children, 1.73% of children had an IQ of 55-70, 0.34% of children had an IQ of 25-54, and 0.1% of children had an IQ of below 25 (Chapman et al., 2008). In a similar study of 10-year-old Georgia children, 0.84% of children had an IQ of 50-70 while 30.36% of children had an IQ below 50 (Murphy, Yeargin-Allsopp, Decouflé, & Drews, 1995).

In addition to differing methodology, trends in classification have emerged. One of these trends was the euphemistic application of "learning disability" rather than borderline or mild ID (Fujiura, 2003). To examine size of the mislabeled group and compare them with the known population, Fujiura examined responses to the 1994-1995 NHIS Disability Supplement. Reasoning that individuals who were identified as having a "learning disability," but also received family support, early intervention services, or special education class placement were more likely to have mild ID than LD, 1.27% of people were estimated to be ID, exceeding the accepted rate of 0.78% of people (Fujiura, 2003). Fujiura also found that the hypothesized mild ID population shared the same adaptive needs supports as the known ID population, excluding community use (2003). Similar trends in classification could impact recent prevalence rates, particularly when comparing states or regions.

Prevalence of Comorbid Disorders

Certain conditions appear at an increased rate in the population of individuals with ID. The 1994/1995 NHIS survey found the most commonly co-occurring conditions with ID to be epilepsy, cerebral palsy, and Autism Spectrum Disorder (ASD) (Larson et al., 2001). Murphy et al. examined the prevalence of ID occurring with Cerebral Palsy, Epilepsy, Visual Impairment, and Hearing Impairment (1995). Cerebral Palsy and ID are estimated to occur in 0.15% of children, while Epilepsy and ID occur in approximately 0.18% of children, and 0.09% of children will have Epilepsy, Cerebral Palsy, and have ID (Murphy et al., 1995). The 1997-2008 NHIS surveys provided prevalence estimates for each of these disorders in the general population. Of the children whose parents were surveyed, an average of 0.67% experienced seizures in the year preceding their parent's interview (Boyle et al., 2011). Cerebral Palsy affected approximately 0.45% of children (Boyle et al., 2011). An average of 0.47% of children

had ASD – but the prevalence had increased from 0.19% in 1997 to 0.74% in 2008, for a 289% increase (Boyle et al., 2011).

In addition to commonly co-occurring with ID, ASD presents many of the same challenging symptoms and limitations (Matson and Shoemaker, 2009). An increase in severity of ID is also associated with increased risk of ASD (Matson and Shoemaker, 2009). Estimates for the rate of individuals with co-occurring ID and ASD vary from 17.6% to 40% (Matson and Shoemaker, 2009). When using systematic file review to estimate the true prevalence of ASD in West Virginia, the Autism and Developmental Disabilities Monitoring (ADDM) Network found 0.45% of 8-year-olds met the criteria for ASD in 2000, compared to the 0.395 of children that had diagnoses for the disorder (Rice, 2007).

A meta-analysis of nine studies examining comorbidity between ID and psychiatric disorders found mixed results (Einfeld, Ellis, & Emerson, 2011). Between 30 and 50% of people with ID may also have a mental disorder; however, the impact of the most thoroughly investigated risk factors, such as severity, gender, and age remains unclear (Einfeld et al., 2011).

Factors that Could Impact Prevalence

The occurrence of ID varies on every level, from local to international. Some variance has already been discussed and attributed to the methodology used to calculate prevalence, but there are many other factors to consider when examining the prevalence of ID. Some factors are inherent to an individual, while others occur in the environment, and some are combinations of environmental events. When considering risk factors of ID, Schalock and Luckasson discuss a multifactorial approach that considers when specific risk factors occur and the groups of risk factors (2004). The factors are categorized as social, biomedical, behavioral, or educational;

these events may occur in the prenatal, perinatal, or postnatal period (Schalock and Lucasson, 2004).

Socioeconomic Status. Socioeconomic Status (SES) is highly related to rates of Intellectual Disability. Receiving free or reduced lunch was the most predictive variable for mild and moderate/severe retardation (Chapman et al., 2008). This relationship holds on an international level; a study of English students concluded eligibility for free or reduced lunch was associated with increased risk of Intellectual Disability, with the highest correlation to Mild ID and decreasing strength of association as the severity of ID increased (Emerson, 2010).

Another SES factor considered by Emerson was community trends; living in a densely populated neighborhood where the majority of residents are well below the poverty threshold increases the risk of mild ID (2010). Generally, being below the poverty threshold is associated with an increase in ID prevalence (Oswald, Coutinho, Best, & Nguyen, 2001). One byproduct of poverty is poor nutrition or hunger. Children who experience malnutrition at a young age are nine times more likely to have ID and have low academic skills, with both deficits persisting through adulthood (Waber, 2014).

Intergenerational Risk Factors. Situations that occur before a child's birth, but still increased the likelihood of the presence of a disability, are called intergenerational risk factors (Schalock and Lucasson, 2004). One intergenerational factor that may be linked to ID is maternal education. The strongest predictive factor for an IQ of 55-70 is less than 12 years of maternal education (Chapman, Scott, & Mason, 2002). Less than 12 years of maternal education is strongly linked to all severities of ID and one of the most highly correlated risk factors with profound ID (Chapman et al., 2008).

Another intergenerational factor that may be linked to ID is maternal age. The most strongly related factor to an IQ of 25-54 is a maternal age exceeding 35-years-old (Chapman, 2002). Despite the increased maternal age being more predictive of the child having a lower IQ, the higher birth rate among mothers less than 24-years-old, with less than 12 years of education, causes their offspring to represent the largest proportion of children who have ID (Chapman, 2002). One study found that IQ improved at least two SEM's, or 6.4 points, for 47.6% of children of teenage mothers who were given an IQ test as 6-year-olds and again assessed as 10-year-olds (Cornelius, 2010). The increase revealed no relationship to race (Cornelius, 2010).

Racial Disproportion. The racial composition of a community may also be something to consider when examining communities with an atypical prevalence of ID. While only 0.74% of Caucasian 10-year-olds were estimated to be ID, 1.97% of African American 10-year-olds were predicted to be ID (Murphy et al., 1995). Race was not predictive only when considering those with profound ID, or an IQ of less than 20 (Murphy et al., 1995). However, when controlled for factors related to low-socioeconomic status, including maternal age, maternal education, and income, the difference in the prevalence rates of mild ID between races was greatly reduced (Yeargin-Allsopp, Drews, Decouflé, & Murphy, 1995).

When considering educational eligibility, there are greater discrepancies in prevalence between racial groups for ID than any other disability (U.S. Department of Education, 1998). Specifically, 2.6% of non-Hispanic, African Americans received services for ID, making them more than twice as likely to be identified than the 1.2% of their non-Hispanic, Caucasian peers who receive services for ID (U.S. Department of Education, 1998). African American students of both genders are disproportionately identified as ID when compared to other race/ethnicity

categories, and African American males are more than twice as likely to be identified as ID when compared to African American females (Oswald, 2001).

Instrumentation. Standardized instruments can produce unpredictable results, even when used by trained psychologists who follow the standardization protocol with integrity. When considering the Weschler Intelligence Scale for Children (WISC-IV), the Full Scale Intelligence Quotient (FSIQ) may be of more utility in identifying children with ID than the General Ability Index (GAI), a measure of overall ability that includes the Perceptual Reasoning and Verbal Comprehension indexes but excludes the scores that comprise the Processing Speed and Working Memory indexes (Koriakin, 2013). When the GAI resulted in a higher score during an Intellectual Disability evaluation, it typically only raised standard scores to the outer consideration of borderline, or a standard score of 75 (Koriakin, 2013). However, these students were no more likely to have intact adaptive skills (Koriakin, 2013). Given the significant need for academic supports even with a GAI of 75, and a similar need for adaptive supports, it may be more useful to consider the FSIQ for ID placement decisions.

Adaptive Behavior. The adaptive behavior requirement is a crucial diagnostic element for ID, but not a perfect measure. Low adaptive skills can occur in a multitude of disorders, which may complicate the identification of a student with a true ID. A comparison of adaptive skills scores between children with ID and those with ADHD revealed no significant differences overall (Lindblad et al., 2013). However, when considering children over the age of 12, those with ADHD had significantly lower adaptive skills scores than those with ID (Lindblad et al., 2013). The presence of markedly impaired adaptive functioning among older children with ADHD could lead to some children who have Below Average range intellectual abilities being

misclassified as having ID – especially when considering the difficulty these children may have attending to standardized test procedures.

Additionally, the method in which adaptive behavior deficits are assessed must be considered. Although the DSM-5 encourages practitioners ascertain a diagnostic impression in addition to the use of required standardized instruments, one must pay due diligence when choosing a method to measure adaptive behavior (American Psychological Association, 2013). Many scales utilize a parent or teacher as an informant, and can be sent home for completion. These standardized scales can provide very useful and accurate information about a child's abilities both at home and at school, and in a variety of activities in both settings (Floyd et al., 2015). However, while these instruments rely on honest reporting from a parent or teacher, they do not include validity scales, such as positive or negative impression, to evaluate response processes (Floyd et al., 2015).

When considering the educational system specifically, adaptive behavior is not always required, and there is no standard for when it is used (Polloway et al., 2009). In West Virginia, as discussed earlier, the adaptive behavior requirement does not align with newly established DSM-5 standards. Because impairment in one of the three domains requires impairment in several related areas, it may be more likely that a child is identified using WVBE Policy 2419's criteria than that established in the DSM-5, resulting in a higher prevalence rate.

Need for Study

In 2003, West Virginia was one of only two states with a school-based prevalence rate of ID exceeding 2.0%, which was over twice the national average at that time (Polloway et al., 2010). The national school-based prevalence of ID has steadily decreased, from 0.9% in 1996 to 2003, to 0.8% from 2004-2006, to 0.7% from 2007-2009, and finally to 0.6% from 2010-2012

(U.S. Department of Education, 2010; U.S. Department of Education 2014). Based on 2012 child count data, 2.46% of school-aged children in West Virginia were identified with ID, over six times the national rate (WV OSEP Data Display, 2014).

Presence of Contributing Factors in West Virginia. West Virginia reported the fifth highest poverty rate in the nation, 17.9%, while reporting a 3.3% hunger rate, which matches the national average (Taponga, Suter, Nord, & Leachman, 2004). Poverty rates in the Appalachian region are rising, particularly in the coalfields, where the rural population faces an increasingly difficult task of finding employment (Gebremariam, Gebremedhin, & Schaeffer, 2010). SES is highly correlated with ID incidence, and the low SES of West Virginians may contribute to a higher school-based prevalence of ID.

Maternal age and education are two intergenerational risk factors correlated with the presence of ID. The Pregnancy Risk Assessment and Monitoring System (PRAMS) data was utilized to provide estimates for typical levels of maternal age and education in West Virginia from 1993 to 1995 (Dietz, Adams, Spitz, Morris, & Johnson, 1999). Dietz et al. estimated 40.8% of live births were to mothers aged 24 years or less; of these women, 17.4% were aged 15 to 19 years (1999). When considering highest educational level, 22.0% of the mothers had less than 12 years of education and 44.4% have 12 years of education (Dietz et al., 1999). Both of these factors may correlate to an increased prevalence of ID in West Virginia.

Environmental risk factors may also contribute to an increased prevalence of ID in West Virginia. Very relevant to the industrial state of West Virginias is emerging evidence that the presence of environmental factors could also be affecting the prevalence of ID or Autism Spectrum Disorder (Rzhetsky et al., 2014). Congenital reproductive malformations, which are possibly indicative of parental exposure to toxins, are strongly predictive of Autism Spectrum

Disorder (Rzhetsky et al., 2014). Similarly, non-reproductive congenital malformations had a strong predictive relationship with ID (Rzhetsky et al., 2014).

Although the previously mentioned factors are present throughout the state, some are more common in specific areas. In 2010, counties in the southern region reported the highest teen pregnancy rates in West Virginia, with McDowell, Mingo, Boone, Fayette, Mercer, Lincoln, Wyoming, and Raleigh reporting rates from 5.55 to 9.58% (Hale, Beckner, & Gandee, 2012). The remaining southern counties of Cabell, Wayne, Summers, and Monroe reported relatively lower rates, ranging from 4.16 to 4.96%, but were still significantly above the national average of 3.4% (Hale et al., 2012).

Purpose of Study. Given the high prevalence rate of ID in West Virginia, examination of ID prevalence by Local Education Agency (LEA) is imperative to reveal districts with remarkably high rates over time. Equally important is the identification of LEAs in which ID rates are consistently similar to the national average despite similar geographic and economic status when compared to districts with significantly discrepant rates. LEAs with rates proportionate to the national average will serve as comparison counties in future research when examining variables that may contribute to the root causes of elevated identification rates in West Virginia. Lastly, LEAs with sizable changes in the school-based prevalence rate of ID over time will be identified to add to our understanding of assessment and identification of children and adolescents with ID.

Hypotheses

The null hypotheses in the current study state no mean differences will exist in prevalence rates among the groups of interest.

Research Hypothesis I states fewer students will be identified as ID, consistent with the more stringent WVBE Policy 2419 criteria for ID identification during the latter years of the study. From 2004 through 2010, the criteria for Mental Impairment included general intellectual functioning level that is approximately 70 to 75 or below on scales with a mean of 100 and a standard deviation of 15. This permitted flexibility for more students within the borderline range of intelligence to potentially qualify for services. Beginning in 2010, a policy change was made wherein students must demonstrate intellectual functioning at least two standard deviations below the mean, in consideration of 1.0 standard error of measurement. This change generally prohibited students with IQs above 73 to be eligible for the categorical label.

Research Hypothesis II states there will be differences between regions or the eight RESAs in West Virginia due to common socioeconomic factors. Specifically, LEAs in the southern region of the state, RESAs I and II, are expected to have higher prevalence rates of ID given the presence of correlates of ID, such as low maternal age and lower SES, as demonstrated by the economic distress which characterizes the coalfields of Appalachia (Hale et al., 2012; Gebremariam, 2010).

Research Hypothesis III states there will be variability between and within LEAs. LEAs with significantly larger total student enrollment would likely be less impacted by year-to-year changes. Because significant enrollment increases or reductions, changes in diagnostic criteria, and/or system wide changes in the practices of all school psychologists in a given district would likely be required to alter the prevalence rate considerably, it is predicted LEAs with the largest total enrollments are more likely to maintain consistently lower identification rates. Conversely, smaller LEAs are hypothesized to be more vulnerable to changes for several reasons. First, LEAs with the smallest populations would be more sensitive to either a group of students with ID aging

out or exiting the district or a brief influx of referrals. In addition to the sheer effect of smaller numbers, small LEAs may be influenced more by the practice of individual providers. These LEAs are likely served by only one school psychologist or a single contractual provider. Consequently, it is predicted LEAs with smaller total enrollment may be more likely to experience change over time.

CHAPTER 2

METHOD

Participants

This study utilized publically available data, which was collected annually in each of West Virginia's LEAs, to calculate an annual administrative prevalence rate for each year from 2004 to 2013. Fifty-five districts were included in the study. Two of the fifty-seven LEAs in West Virginia were excluded: West Virginia Schools for the Deaf and Blind and Office of Institutional Education Programs. The West Virginia Schools for the Deaf and Blind was excluded because only students with sensory impairments such as Hearing Impairments, Deafness, Deaf-Blindness, and Visual Impairments are enrolled. The Office of Institutional Education Programs was excluded because its enrollment does not represent a typical population; many of the institutional facilities educate students in correctional facilities and those who have been removed from their homes.

Because the total number of students with a primary exceptionality of ID in each LEA in each year examined exceeded 10, no cells were suppressed for public reporting by the WVDE. Therefore, the researchers were able to calculate the administrative prevalence rate for each county school district from the 2004-2013. The data used in this study are publically available through the West Virginia Department of Education. Total enrollment counts can be found online at the ZoomWV Data Dashboard (http://zoomwv.k12.wv.us/Dashboard/portalHome.jsp). Total counts of students with ID are online at the West Virginia Educational Information System (http://wveis.k12.wv.us/nclb/OSEcf/data/replist1.cfm?cn=004&rp=RPTCARD07).

Procedure

After aggregating the data from these two sources, two graduate students in the Marshall University School Psychology Program reviewed the data for accuracy, and any discrepancies were resolved.

To calculate the administrative prevalence rate of Intellectual Disabilities in West Virginia's school-age (3-21) population, researchers used the following calculation:

$$Rate = \frac{\begin{array}{c}Unduplicated\ count\ of\ children\ and\ adolescents \\ with\ Intellectual\ Disabilities\ in\ a\ LEA\end{array}}{\begin{array}{c}LEA's\ Prek-12\ student\ enrollment, including \\ students\ with\ and\ without\ disabilities\end{array}} \times 100$$

The denominator of the calculation is based on a district's total enrollment, or the official annual student count for grades preschool through 12. Historically, the enrollment collection or "snapshot" has been obtained on the last day of the second month of school. However, October 1st has since been selected as the consistent collection date for total school enrollment. The total enrollment count included in the denominator contains no ungraded classes or students assigned to grades 13 or adult education. The total enrollment statistic does include preschool students in public schools or collaborative programs, students enrolled in grades K-12, homebound students who are enrolled but receiving services in a home setting due to medical reasons, and students with disabilities enrolled in the home county (or responsible LEA) but serviced through an out-of-school environment or residential in-state or out-of-state setting.

The numerator of the calculation is the total number of children and adolescents (Ages 3-5 and 6-21) with intellectual disabilities as reported in the West Virginia's IDEA Children with Disabilities Reports. Section 618 of IDEA 2004 requires states to annually count children receiving special education services on any date between October 1 and December 1. West

Virginia has used December 1 as the annual IDEA child count date for all years under examination. Federal count specifications additionally require that:

> 1) The child or student's age be calculated as of the day of the actual child count collection;
> 2) The count is an unduplicated one and the child may only be counted under the primary disability category;
> 3) The child has a disability and is receiving special education and related services or special education services only on the date of the count;
> 4) Students with disabilities who are enrolled by their parents in private schools and are eligible under IDEA shall be counted if they receive special education or related services or both; and
> 5) Children and adolescents should be reported by the LEA that has responsibility for the students.

In addition to meeting the general child count requirements; the students must have a primary exceptionality of intellectual disability on December 1 of each year to be included in the numerator. In West Virginia, the definition for inclusion for Mental Impairment from 2004-2010 is as follows (WVDE, 2004, p. 15-6):

1) General intellectual functioning level that is approximately 70 to 75 or below on scales with a mean of 100 and a standard deviation of 15.
2) Related limitations in two or more adaptive skill areas substantially below the average level of functioning.
3) Age of onset is 18 or below.

From 2010 to 2012 the definition for inclusion for Mental Impairment is as follows (WVDE, 2009, p. 27):

1) General Intellectual Functioning
   a. The student with mild to moderate mental impairments has general intellectual functioning ranging between two to three standard deviations below the mean, in consideration of 1.0 standard error of measurement, as determined by a qualified psychologist, using a individually administered IQ test; or
   b. The student with moderate to severe mental impairments has general intellectual functioning ranging more than three standard deviations below the mean, in consideration of 1.0 standard error of measurement, as determined by a qualified psychologist, using a individually administered IQ test; and

2) The student exhibits concurrent deficits in adaptive functioning expected for his or her age in at least two of the following areas: communication, self-care, home-living, social/interpersonal skills, use of community resources, self-direction, functional academic skills, work, leisure, health, or safety; and
3) The age of onset is 18 or below; and
4) The student's condition adversely affects educational performance; and
5) The student needs special education.

From 2012-2013, *Intellectual Disability* retained the same inclusion criteria as *Mental Impairment* introduced in 2010 (WVDE, 2012, p. 28-9).

CHAPTER 3

RESULTS

Data Analysis

After compiling the annual enrollment counts and the total count of children with ID for the 55 LEAs over the ten-year time span of interest, year-to-year percent changes were derived for each of the two variables. Additionally, percent changes were calculated from the beginning year in the study, 2004, and the final year in the study, 2013, for both enrollment and ID count. Percent changes were obtained in Microsoft Excel with the following formula wherein y2 is the ending or latter value and y1 is the original value:

$$(y2 - y1) / y1 \times 100.$$

Year-to-year and the overall percent changes were examined to assess variability in LEA counts. These comparisons are used in concert with the actual prevalence rates to describe trends as related to the above hypotheses.

The administrative prevalence rates were calculated in Microsoft Excel, according to the calculation illustrated in the Procedure section. After the data were imported into SPSS, the ID prevalence rates for each year were analyzed using the *Descriptive Statistics* and *Frequency* tabs. Quartiles were generated based upon ID prevalence rates for each of the ten years. This quartile function in SPSS divided the LEAs into four equal groups. The 25% of LEAs falling at or below the first quartile are those districts with the highest ID prevalence rates, whereas those at or above the third quartile are the 25% of the districts with the lowest prevalence rates.

LEAs with identification rates consistently in the top and bottom quartiles over time were identified. LEAs with significant movement across the quartiles at any point during the 10-year-

period were of similar interests (i.e., either significant increases in rank or significant reductions).

All 55 LEAs in West Virginia are grouped into eight RESAs that comprise geographical service districts. One-Factor Analysis of Variance (ANOVA) tests were applied with the ID prevalence rates as the dependent variable, while RESA assignment served as the factor or single independent variable. ANOVA was selected to determine if all RESA mean ID rates were equal or if any one RESA ID mean rate varied significantly. Tukey's honest significant difference (HSD) test was applied as a post hoc multiple comparison procedure to determine where significant means differences existed. It was selected because the number of LEAs in each RESA were unequal.

Table 1
LEA assignment into RESA

RESA	LEAs	Total Number of LEAs
I	McDowell, Mercer, Monroe, Raleigh, Summers, Wyoming	6
II	Cabell, Lincoln, Logan, Mason, Mingo, Wayne	6
III	Boone, Clay, Kanawha, Putnam	4
IV	Braxton, Fayette, Greenbrier, Nicholas, Pocahontas, Webster	6
V	Calhoun, Jackson, Pleasants, Ritchie, Roane, Tyler, Wirt, Wood	8
VI	Brooke, Hancock, Marshall, Ohio, Wetzel	5
VII	Barbour, Doddridge, Gilmer, Harrison, Lewis, Marion, Monongalia, Preston, Randolph, Taylor, Tucker, Upshur	12
VIII	Berkeley, Grant, Hampshire, Hardy, Jefferson, Mineral, Morgan, Pendleton	8

Size of LEA was analyzed via two separate procedures. First, LEAs were artificially ranked into the following categories based upon size of district total enrollment: 1) 2,499 or fewer students; 2) 2,500-4,999 students; 3) 5,000-9,999 students; 4) 10,000-14,999 students; and 5) greater than 15,000 students. ANOVA and Tukey's HSD tests were used to analyze mean differences in ID prevalence rate. Second, size was analyzed using the Pearson Correlation test in SPSS, using prevalence rates and actual district total enrollment as the two ratio measures.

Findings

In 2004, the smallest county represented in the sample, Gilmer, enrolled 1009 students in grades PreK-12. Twelve other LEAs enrolled fewer than 2000 total students. In 2013, Gilmer continued to have the smallest PreK-12 enrollment; however, the LEA witnessed a decline in total enrollment with only 903 students enrolled, constituting a nearly 11% reduction in enrollment. Several other small districts, including Monroe, Pocahontas, and Tyler experienced similar decreases in enrollment over the 10-year-period, as noted by Table 6. When considering small counties, only Wirt and Taylor experienced modest increases in enrollment over the 10-year-period, 0.49% and 0.25%, respectively.

West Virginia's largest district in 2004 was Kanawha County, with an enrollment of 27,979 students in grades preK-12. This LEA is located in South Central West Virginia and includes the city of Charleston, which houses the state's capital. While Kanawha demonstrated 1.43% growth over the 10-year-period, the second largest LEA in 2004, Berkeley County, demonstrated the highest increase in total enrollment, a 21.61% change, gaining 3,238 students. Berkeley County is located in RESA VIII in West Virginia's Eastern Panhandle within commuting distance to Northern Virginia and the Washington D.C. area. Jefferson County, the 10th largest LEA in the state demonstrated the second highest overall rate of growth in total enrollment at 18.10%. The growth of these LEAs was atypical for RESA VIII, as the other constituent counties of Grant, Hampshire, and Hardy experienced a modest decrease in enrollment, and Morgan saw a slight increase in enrollment, as noted by Table 6. Two other relatively large districts, Monongalia and Putnam Counties, demonstrated respectable enrollment increases as noted by Table 6.

The Northern Panhandle of the state includes the five counties that comprise RESA VI. Excluding Ohio County, each district in this RESA experienced enrollment declines, as seen in Table 6. Ohio County, which includes the city of Wheeling, WV, noted a 1.29% enrollment increase.

Half of the LEAs that comprise RESA I experienced moderate enrollment gains, while the remaining LEAs demonstrated declines in enrollment. Excluding a gain in enrollment from 2011 to 2012, McDowell experienced declining enrollment every year, for a total of 15.62% change and a loss of 675 students. Raleigh, however, experienced annual gains in enrollment excluding a loss from 2011 to 2012, resulting in a 7.57% change, gaining 884 students.

Examination of LEAs with total enrollment between 2,000 and 9,999 students did not yield salient trends, as these counties typically experienced both growth and decline.

Research Hypothesis I states fewer students will be identified as ID, consistent with the more stringent WVBE Policy 2419 criteria for ID identification during the latter years of the study. As illustrated in Table 5, rates of identification of ID have decreased. Overall, school-based prevalence of ID decreased in 50 LEAs, increased in 4 LEAs, and was constant in 1 LEA, as shown in Table 5. Table 3 provides raw ID counts for each LEA. Table 4 illustrates administrative prevalence from 2004-2013.

Research Hypothesis II states there will be differences between regions or the eight RESAs in West Virginia due to common socioeconomic factors. Specifically, LEAs in the southern region of the state, RESAs I and II, were expected to have higher prevalence rates of ID. Some RESAs had constituent LEAs that were consistently in Q1 or Q4. When considering Q4, which includes LEAs with the lowest prevalence of ID, Berkeley, Jefferson, Mineral, Morgan, and Pendleton were frequently appearing members of RESA VIII. When considering

Q1, which includes LEAs with the highest prevalence of ID, McDowell, Summers, Wyoming, Monroe, and Mercer were frequently appearing members of RESA I.

A one-way analysis of variance (ANOVA) was conducted to determine if the average prevalence rate of ID varied by RESA, as seen in Table 8. A significant relationship existed between RESA and prevalence in 2004, 2005, 2006, 2010, 2011, 2012, and 2103. This relationship was approaching significance in 2007 and 2009.

Post-Hoc analyses using the Tukey's HSD test was conducted to identify which RESAs had significant mean differences, shown in Table 9. The analysis yielded a significant difference in the 2004 prevalence of ID between RESA I and RESA VIII, as well a difference that was approaching significance between RESA I and RESA III. In 2005, a significant difference in ID prevalence rates existed between RESA I and RESA III, RESA I and RESA VI, and RESA I and RESA VIII. A significant difference existed in the 2006 prevalence of ID between RESA I and RESA VIII, as well a difference that was approaching significance between RESA I and RESA III. In 2007, a significant difference in ID prevalence rates existed between RESA I and RESA VIII. In 2009, a significant difference in ID prevalence rates existed between RESA I and RESA VIII. In 2010, significant differences in ID prevalence rates existed between RESA I and RESA III, RESA 1 and RESA VI, and RESA I and RESA VIII. In 2011, there were significant differences in ID prevalence rates between RESA I and RESA V, RESA 1 and RESA VI, and RESA I and RESA VIII, as well a difference that was approaching significance between RESA I and RESA III. In 2012, a significant difference in ID prevalence rates existed between RESA I and RESA III, RESA I and RESA IV, RESA I and RESA V, RESA I and RESA VI, RESA I and RESA VII, and RESA I and RESA VIII. In 2013, there were significant differences in ID

prevalence rates between RESA I and RESA III, RESA I and RESA IV, RESA I and RESA V, RESA I and RESA VI, RESA I and RESA VII, and RESA I and RESA VIII.

Research Hypothesis III states there will be variability between and within LEAs. LEAs with significantly larger total student enrollment were expected to be less impacted by year-to-year changes. A one-way analysis of variance (ANOVA) was conducted to determine if the Average Prevalence rate of ID varied by LEA size. LEAs were artificially ranked into the following categories based upon size of district total enrollment: 1) 2,499 or fewer students; 2) 2,500-4,999 students; 3) 5,000-9,999 students; 4) 10,000-14,999 students; and 5) greater than 15,000 students. As Table 10 illustrates, no significant relationship between LEA size and ID prevalence was found.

The relationship between actual county enrollment and ID prevalence was also examined by calculating Pearson correlation coefficients. This analysis utilized prevalence rates and actual district total enrollment as the two ratio measures, rather than a categorical variable. Whereas no significant differences existed by size when using categorical size, a small but significant difference was found when comparing the total enrollment of districts to ID prevalence, as noted in Table 11.

CHAPTER 4

DISCUSSION

The purpose of this study was to assess the school-based prevalence of ID within West Virginia and identify potential trends. The findings reveal several trends in prevalence within and between LEAs, as well as between some regions. The study has shown an overall decrease in school-based prevalence of ID, as well as variation in identification rates within LEAs across time, and significant differences in prevalence between RESAs.

Research Hypothesis I states fewer students will be identified as ID, consistent with the more stringent WVBE Policy 2419 criteria for ID identification during the latter years of the study. Because the criteria for Mental Impairment included a general intellectual functioning standard score of 70 to 75 from 2004 to 2010, there was flexibility when considering students in the borderline range. It was predicted the school-based prevalence of ID would decrease when WVBE Policy 2419 changed in 2010 to require intellectual functioning which is two standard deviations below the mean, in consideration of 1.0 standard error of measurement, effectively creating a new "cut-off" score of 73 when considering educational eligibility.

Overall, the school-based prevalence of ID decreased in 50 out of 55 of West Virginia's LEAs during the 10-year study period. As Table 5 illustrates, the total school-based prevalence of ID throughout West Virginia decreased each year. From 2004 to 2013, there was a 23.39% reduction in the school-based prevalence of ID in West Virginia. This decrease was expected, given the more stringent criteria to be identified as having ID as a primary exceptionality.

Research Hypothesis II states there will be differences between regions or the eight RESAs in West Virginia due to common socioeconomic factors. Specifically, it was predicted LEAs in the southern region of the state, RESAs I and II, would have higher prevalence rates of

ID given the presence of correlates of ID, such as low maternal age and economic distress (Hale et al., 2012; Gebremariam, 2010).

Certain regions also report significantly different prevalence rates of ID, as noted in Table 8 and Table 9. While RESA VIII typically reported a lower prevalence than RESA I, RESA I reported a statistically higher prevalence than each other RESA on at least one occurrence, as shown in Table 9. As hypothesized, many southern-situated LEAs reported a higher school-based prevalence of ID. However, not all southern, coal-producing counties had consistently high prevalence rates.

This difference could be related to common socioeconomic factors. While RESA VIII enjoys the boons of economic growth, RESA I lags behind. Low SES is common among the economically distressed coalfields of Appalachia, where RESA I is located. When considering maternal age, McDowell reported West Virginia's highest teen pregnancy rate in 2010, 9.58%, while Mercer reported the seventh highest rate, 6.57%, and Wyoming had the 9th highest, 5.92% (Hale et al., 2012). Furthermore, in the final year of the study, McDowell and Mercer, both of RESA I, reported enrollment rates of African American students, 10.85% and 9.47%, respectively, that were twice West Virginia's average of 4.68% (WV OSEP Data Display, 2014). As previously discussed, African American students are more than twice as likely to be identified as intellectually disabled that their peers nationally; the high rate of enrollment in these LEAs may correlate with a consistently higher prevalence of intellectual disabilities.

Research Hypothesis III states there will be variability between and within LEAs. LEAs with significantly larger total student enrollment would likely be less impacted by year-to-year changes. Because significant enrollment increases or reductions, changes in diagnostic criteria, and/or system wide changes in the practices of all school psychologists in a given district would

likely be required to alter the prevalence rate considerably in LEAs with the largest total enrollments, it was hypothesized they were more likely to maintain consistently lower identification rates. Conversely, smaller LEAs were hypothesized to be more vulnerable to changes for several reasons, including student movement, increased referrals, or practitioner practices, leading to a change in identification of ID over time.

When considering the variability within LEAs across time, most LEAs experienced years in which their identification rates both decreased and increased, as shown in Table 5. However, when considering variability within LEAs over the 10-year period, the study revealed a decrease in the school-based prevalence of ID in 50 LEAs from 2004 to 2013.

The relationship between county size and school-based ID prevalence was also examined, and mixed results were found. When LEAs were artificially ranked into categories based upon size of district total enrollment, no significant relationship existed between LEA size and ID prevalence, as illustrated by Table 10. However, when the relationship between actual county enrollment and ID prevalence was examined as ratio measures, a small but significant relationship was found, as illustrated in Table 11, indicating county size may be somewhat related to prevalence.

Limitations of the Present Study

Several limitations of the current study exist. One limitation when considering school-based prevalence of ID is that the reported numbers are dependent on the decision making of a team, which may choose to consider additional factors when making an educational classification. Since educational eligibility may be more fluid than a clinical diagnosis, increased variability is something one might expect. Another possibility is that the school based prevalence over- or under-estimates the true prevalence of ID. However, Larson et al. established

administrative prevalence should be similar to prevalence in the clinical population, and that the potential downsides of underestimation are outweighed by the possibility of longitudinal study of a large population (2001). It is also possible, however, that the national, school-based prevalence of ID may be an underestimate, due to students not receiving services or being identified as something other than ID. In order to accurately consider the school-based prevalence of ID on a national level, it is crucial to further consider these factors.

Areas for Future Exploration

To accurately compare prevalence rates, it is crucial to know how many students are actually classified as ID. School-based prevalence provides a good estimate, especially when comparing LEAs or states that share diagnostic criteria, nomenclature, and special education placement standards. Consistency between states is not common, and this variation in categorical criteria could also play a role in varying prevalence rates. Inconsistent rules and procedures between states, as well as inconsistent application within states, are likely as common as the inconsistent nomenclature and diagnostic criteria of ID. When considering the utility of comparing the school-based prevalence of ID on a state and local level, the possibility of underestimation is one of the many factors that could be examined in a future study to determine factors that may be related to an increased prevalence of ID in West Virginia's educational population. Other factors that could be examined include the impact of risk factors and delivery of school psychological services.

Decision-Making and Educational Eligibility. The process of decision-making in the special education eligibility process is multifactorial and includes a large team of stakeholders. There are many points during this process that may determine how a child is identified. Given a child with multiple disabilities, the Multi-Disciplinary Team (MDET) is faced with several

categorical possibilities. The typical practices of the LEA or school may influence that MDET's decision-making.

When considering a child who could be eligible for special education services under several categories, there is no standardized method to determine the most appropriate primary exceptionality. Students with a comorbid diagnosis may receive a variety of primary exceptionalities, depending on the state, LEA, or MDET. For example, in states with categories such as "Multiple Disability," which requires co-occurring disabilities that create sufficiently unique educational need that neither disability would be appropriate as a primary exceptionality, students with ID and a comorbid diagnosis may be more likely to receive services under this primary exceptionality (IDEA, 2006, p. 46756). This could potentially lead to fewer students being reported with ID as a primary exceptionality. As Larson et al. established, Epilepsy, Cerebral Palsy, and ASD commonly co-occur with ID (2001). For many of these children, Multiple Disability may be more appropriate, as they may have very unique educational needs. Even within West Virginia, there is potential for placement of a student with comorbid disorders into varying categories. In some LEAs, it may be more commonplace to choose one disability or to utilize the "Other Health Impaired" (OHI) category. Then, at the school level, the MDET has discretion to determine an area of exceptionality, provided the student receives an appropriate education.

To examine the possibility of underestimation due to differing categorization practices, rates of identification for students with a primary exceptionality of ID could be compared to rates of identification for primary exceptionalities that students with ID receive instead of ID. For example, students who are also diagnosed with Cerebral Palsy and ID could receive services for a primary exceptionality of Orthopedic Impairment (OH), ID, or OHI. Students with co-

occurring ID and ASD may be identified in either category or OHI. Additionally, as Fujiura noted, lateral placement of students with mild ID as having Specific Learning Disability (SLD) is possible, so this category could also be examined (2003). It may then be useful to examine the identification practices within LEAs where disproportionate ID prevalence correlates with elevated or decreased identification in one or more of these areas.

Although an analysis of categorization may shed some light on identification practices, LEAs with consistently elevated school-based prevalence rates, like McDowell or Mercer, may be best examined as a case study. Related factors to ID occurrence, including low maternal age, low SES status, and higher school-aged minority enrollment occur more frequently in these LEAs. Additionally, the variability present in measurement and identification is also present. A case study of these LEAs would provide a systematic examination of these risk factors and could help school psychologists better understand how to best assess and serve the population.

It may also be difficult to ascertain a diagnostic impression of some children, especially the estimated 17.6 to 40 % of children who may have both ASD and ID (Matson and Shoemaker, 2009). When faced with similar behaviors and cognitive limitations, how does one determine which disability is primary? In the ADDM Network's study of 8-year-olds in West Virginia, 96 of the 104 children who met ASD criteria were receiving special education services, but only 45 children, or 46.9%, were identified with a primary exceptionality of ASD (Rice, 2007). Within the educational system, factors such as staffing and budgeting may further complicate the decision of placement. For example, a county with a small budget and no highly qualified Autism teacher may find it more practical to choose ID as a primary eligibility category when faced with a child who could qualify for ID or ASD. In situations such as these, the school would not be required to make a diagnosis of ASD, which may be costly for the district. Additionally,

no new staff would be hired and the needs of the child would still be addressed and met through an IEP. This identification practice could cause the school-based administrative prevalence of ID to rise disproportionally while the prevalence of ASD is unchanged.

Regional Prevalence. Further examination of regional prevalence may also help researchers understand if there is a relationship between the population and prevalence. RESA I, which reports a consistently elevated prevalence of ID when compared to other RESAs, includes southern counties and sits among the coalfields. When considering counties that are close in proximity to RESA I, other southern counties like Clay and Lincoln also consistently reported a higher school-based prevalence of ID than the West Virginia average. These counties also share traits such as increased teen pregnancy rate (Hale et al., 2010).

A comparison with central Appalachian LEAs from neighboring states may help determine if the elevated school-based administrative prevalence present in the southern region of West Virginia is common to the Appalachian region. When considering these central Appalachian LEAs, it may be useful to compare with consideration to simple geographic similarity – those LEAs that are directly bordering the southern LEAs in West Virginia with high school-based prevalence – and also with consideration to which Appalachian LEAs are along the coal seam. Those counties along the coal seam may experience a similar economic dependence on coal and share in the economic distress of its falling worth.

Delivery of Services. A closer look at the delivery of school psychological services could also be considered. While there are many complex factors that make up delivery of services that could not be determined without directly surveying providers, there are other potential elements that could be examined for relationships.

Prevalence rates could be examined in relation to the employment status of the school psychologists in the LEA, namely whether the provider is contracted or a salaried BOE employee. Contract school psychologists may not have as much time to develop a clinical impression of a student or to consult with teachers and other professionals regarding the student's abilities. One could also examine the ratio of school psychologists to students in relation to ID prevalence. It may be that providers who are confronted with full caseloads of initial evaluations are simply unable to conduct new testing when writing reevaluation plans, and instead rely on years-old results. As established by Cornelius, the IQ of 6-year-old children of teenage mothers improved at average of at least 6.4 points when retested again at 10 years of age (2010). A developmentally disabled child's cognitive ability would be assessed preceding their sixth birthday to transition to school-aged special education, potentially resulting in an ID diagnosis – in some LEAs, it may be that child's cognitive abilities are not reassessed for some time, due to the lack of staffing.

Instrumentation. The standardized measure chosen to assess IQ may also be related to the school-based prevalence of ID. Within measures, significant differences may exist in how psychologists interpret scores, and between measures, some may be more appropriate for the assessment of children with suspected intellectual disability.

Choosing an instrument to assess suspected intellectual disability should be a thoughtful process, yet some practitioners may simply use the same instrument for every child. When assessing young children, care should be taken that the verbal demands of test administration do not exceed their exposure to language. In addition to the potential difficulty an instrument with high expressive verbal demands may cause a child, children with less language exposure might struggle with complicated instructions or rigid teaching items.

Whitaker estimates that a combination of chance error and systematic error contributes to a true confidence interval of 16 points below and 25 points above a FSIQ on the WISC-IV (2010). Although this estimate varies substantially from published values, it includes both chance error from lack of consistency, lack of stability, and scorer error, as well as systematic error from the floor effect, Flynn effect, and lack of consistency between Weschler instruments (Whitaker, 2010). The Weschler Adult Intelligence Scale – Third Edition (WAIS-III) four-factor measure of intelligence was found to not have factorial validity when assessing ID adults (MacLean, McKenzie, Kidd, Murray, & Schwannauer, 2011). Additionally, the WAIS-III floor does not sufficiently discriminate between abilities of lower-functioning adults (MacLean et al., 2011).

When considering a single measure, such as the WISC-IV, how a practitioner chooses to interpret the scores may impact the placement of a child. For example, a school psychologist may choose to interpret the GAI of the WISC-IV, and identify a student with a FSIQ standard score of less than 70, which meets ID criteria, but a slightly higher GAI of 75 as having a SLD. As established by Koriakin, this student will have the same academic and adaptive needs as an ID student (2013). Despite the practical implication – those students with borderline GAI scores being better served by being identified as ID with their FSIQ – some may choose to interpret the GAI instead, and avoid labeling the child as ID.

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APPENDIX A:
TABLES

Table 2
Total Enrollment as of the October 1 Child Count

	Enrollment									
LEA	2004 - 2005	2005 - 2006	2006 - 2007	2007 - 2008	2008 - 2009	2009 - 2010	2010 - 2011	2011 - 2012	2012 - 2013	2013 - 2014
Barbour	2599	2585	2551	2552	2596	2478	2499	2455	2441	2454
Berkeley	14983	15623	16322	16868	17214	17446	17720	18002	18171	18221
Boone	4572	4566	4600	4601	4622	4672	4545	4553	4526	4543
Braxton	2457	2411	2366	2291	2289	2230	2220	2157	2156	2128
Brooke	3638	3579	3586	3521	3423	3404	3363	3314	3332	3246
Cabell	12249	12325	12302	12346	12522	12522	12700	12880	12979	13085
Calhoun	1187	1178	1153	1151	1126	1104	1122	1137	1083	1069
Clay	2101	2025	2054	2022	2026	2043	2071	2047	2060	1975
Doddridge	1284	1243	1240	1234	1206	1169	1169	1146	1161	1159
Fayette	6919	6873	6858	6825	6810	6758	6827	6874	6867	6810
Gilmer	1009	954	973	942	941	939	943	933	945	903
Grant	1995	1989	2003	1999	1975	1935	1887	1873	1840	1819
Greenbrier	5297	5333	5328	5227	5248	5285	5247	5302	5223	5191
Hampshire	3618	3678	3772	3747	3727	3653	3590	3592	3499	3422
Hancock	4296	4298	4291	4305	4327	4311	4308	4332	4202	4181
Hardy	2330	2293	2343	2360	2353	2307	2297	2279	2348	2321
Harrison	11355	11316	11279	11235	11192	11196	11128	11004	10935	10913
Jackson	5022	5060	5051	5061	5067	5040	5046	4997	4965	4914
Jefferson	7672	7874	8043	8299	8398	8595	8843	8842	8958	9061
Kanawha	27979	27998	28104	28350	28465	28481	28458	28429	28548	28378
Lewis	2789	2735	2720	2704	2686	2650	2605	2635	2626	2624
Lincoln	3764	3741	3587	3523	3606	3626	3679	3689	3736	3691
Logan	6050	6143	6417	6451	6506	6431	6449	6393	6426	6271
Marion	8183	8238	8251	8116	8122	8116	8104	7960	8096	8036
Marshall	5241	5184	5133	4990	4886	4821	4778	4726	4691	4708
Mason	4209	4267	4408	4400	4299	4308	4381	4311	4323	4312
Mercer	9336	9306	9402	9484	9538	9552	9611	9657	9673	9585
Mineral	4583	4609	4579	4535	4551	4460	4373	4282	4244	4187
Mingo	4686	4599	4575	4640	4688	4586	4573	4506	4441	4403
Monongalia	9872	9920	10094	10213	10293	10459	10731	10929	11029	11192
Monroe	2068	2012	2015	1988	1955	1945	1921	1884	1852	1820
Morgan	2574	2616	2682	2719	2692	2655	2617	2586	2572	2580
McDowell	4112	3999	3989	3778	3675	3674	3559	3535	3537	3437
Nicholas	4225	4150	4091	4114	4083	4042	4076	4051	4035	3956
Ohio	5359	5323	5359	5309	5279	5285	5370	5469	5485	5428
Pendleton	1201	1177	1141	1132	1101	1085	1065	1045	1007	1001
Pleasants	1360	1379	1370	1352	1346	1299	1278	1253	1243	1232
Pocahontas	1353	1315	1265	1205	1209	1202	1183	1145	1133	1112
Preston	4702	4685	4583	4585	4559	4628	4600	4607	4575	4583
Putnam	8930	8993	9109	9201	9341	9517	9631	9779	9788	9907
Raleigh	11684	11703	11930	12153	12316	12340	12372	12456	12580	12568
Randolph	4425	4415	4453	4414	4425	4356	4294	4254	4273	4225
Ritchie	1561	1607	1611	1597	1589	1626	1578	1544	1549	1516
Roane	2581	2586	2619	2574	2538	2554	2505	2585	2455	2443
Summers	1616	1607	1590	1567	1532	1548	1551	1564	1569	1596
Taylor	2417	2507	2465	2464	2426	2450	2395	2390	2409	2423
Tucker	1197	1206	1153	1155	1127	1096	1053	1073	1031	1029
Tyler	1561	1590	1583	1518	1479	1482	1419	1407	1373	1348
Upshur	3765	3735	3807	3881	3862	3825	3867	3858	3854	3822
Wayne	7575	7581	7702	7715	7726	7556	7448	7453	7508	7446
Webster	1624	1637	1614	1615	1550	1577	1534	1505	1493	1446
Wetzel	3240	3086	3064	3005	2920	2864	2844	2855	2818	2757
Wirt	1017	1020	1026	997	954	967	1010	1000	1035	1022
Wood	13745	13577	13554	13519	13481	13486	13462	13455	13341	13260
Wyoming	4190	4217	4123	4142	4140	4161	4229	4197	4270	4256
West Virginia	279357	279666	281283	281691	282007	281797	282128	282186	282309	281015

Table 3
Total Students Identified with Intellectual Disability as of December 1 Child Count

	Total Students with ID									
LEA	2004 - 2005	2005 - 2006	2006 - 2007	2007 - 2008	2008 - 2009	2009 - 2010	2010 - 2011	2011 - 2012	2012 - 2013	2013 - 2014
Barbour	106	105	89	96	76	90	83	79	80	90
Berkeley	335	374	399	386	384	354	344	344	330	328
Boone	123	107	118	106	93	90	80	89	94	92
Braxton	84	80	65	58	60	58	59	56	56	47
Brooke	83	91	104	114	104	89	77	80	88	89
Cabell	469	459	441	431	431	413	399	391	371	372
Calhoun	36	37	38	33	32	29	35	27	31	29
Clay	69	64	79	68	74	73	64	68	66	61
Doddridge	46	43	41	40	40	44	37	30	31	30
Fayette	210	198	192	192	161	143	141	141	144	162
Gilmer	38	36	32	31	27	32	34	34	35	34
Grant	71	60	60	63	77	73	72	63	71	71
Greenbrier	216	197	176	156	153	146	134	132	140	139
Hampshire	114	105	112	111	110	105	86	91	92	93
Hancock	166	157	152	149	142	139	124	116	111	106
Hardy	116	84	82	86	92	76	71	78	70	66
Harrison	408	397	394	388	364	371	364	363	350	353
Jackson	121	110	105	104	92	77	83	91	88	78
Jefferson	136	129	123	117	109	110	100	97	99	101
Kanawha	672	643	606	588	601	595	606	594	620	637
Lewis	136	126	113	113	104	100	88	75	74	63
Lincoln	164	146	144	134	144	135	135	129	127	129
Logan	156	143	148	134	126	109	115	119	128	126
Marion	109	111	103	103	105	114	119	113	125	125
Marshall	111	100	98	88	74	69	69	69	73	72
Mason	145	141	145	131	133	125	129	133	125	123
Mercer	328	323	321	322	316	322	341	345	329	344
Mineral	94	98	94	87	79	71	65	66	59	50
Mingo	162	143	148	153	147	145	141	123	124	113
Monongalia	280	272	249	227	222	199	172	167	157	142
Monroe	79	87	79	78	73	81	74	75	83	76
Morgan	41	41	46	45	53	54	48	55	66	63
McDowell	276	272	265	233	242	238	227	210	213	214
Nicholas	108	114	113	115	100	97	99	100	90	75
Ohio	140	140	116	105	109	111	107	118	125	123
Pendleton	41	32	37	40	34	22	22	20	19	18
Pleasants	40	36	32	29	28	24	23	18	21	26
Pocahontas	45	39	35	34	32	29	32	28	29	19
Preston	266	253	218	197	183	177	152	134	122	109
Putnam	191	172	186	179	184	187	179	165	177	178
Raleigh	362	349	334	319	309	277	278	273	255	266
Randolph	171	159	144	138	134	126	119	116	121	111
Ritchie	81	77	70	62	62	54	47	48	41	40
Roane	106	99	97	101	100	105	97	90	90	87
Summers	92	91	75	61	57	53	51	52	59	61
Taylor	76	73	68	69	68	69	68	76	72	71
Tucker	37	33	27	26	28	19	17	18	19	15
Tyler	81	68	62	58	53	57	45	38	33	30
Upshur	135	132	121	119	118	108	106	111	102	103
Wayne	428	415	415	388	373	352	325	321	310	303
Webster	74	75	73	63	57	57	52	44	41	40
Wetzel	106	101	114	105	100	88	81	76	66	63
Wirt	40	33	36	36	33	25	27	22	23	18
Wood	355	320	320	296	289	272	251	247	247	260
Wyoming	231	230	213	193	189	181	181	163	179	189
West Virginia	8906	8520	8267	7898	7680	7359	7075	6921	6891	6823

Table 4
Prevalence of Intellectual Disability in West Virginia from 2003/04-2013/14

	Prevalence (percentage)									
LEA	2004 - 2005	2005 - 2006	2006 - 2007	2007 - 2008	2008 - 2009	2009 - 2010	2010 - 2011	2011 - 2012	2012 - 2013	2013 - 2014
Barbour	4.08	4.06	3.49	3.76	2.93	3.63	3.32	3.22	3.28	3.67
Berkeley	2.24	2.39	2.44	2.29	2.23	2.03	1.94	1.91	1.82	1.80
Boone	2.69	2.34	2.57	2.30	2.01	1.93	1.76	1.95	2.08	2.03
Braxton	3.42	3.32	2.75	2.53	2.62	2.60	2.66	2.60	2.60	2.21
Brooke	2.28	2.54	2.90	3.24	3.04	2.61	2.29	2.41	2.64	2.74
Cabell	3.83	3.72	3.58	3.49	3.44	3.30	3.14	3.04	2.86	2.84
Calhoun	3.03	3.14	3.30	2.87	2.84	2.63	3.12	2.37	2.86	2.71
Clay	3.28	3.16	3.85	3.36	3.65	3.57	3.09	3.32	3.20	3.09
Doddridge	3.58	3.46	3.31	3.24	3.32	3.76	3.17	2.62	2.67	2.59
Fayette	3.04	2.88	2.80	2.81	2.36	2.12	2.07	2.05	2.10	2.38
Gilmer	3.77	3.77	3.29	3.29	2.87	3.41	3.61	3.64	3.70	3.77
Grant	3.56	3.02	3.00	3.15	3.90	3.77	3.82	3.36	3.86	3.90
Greenbrier	4.08	3.69	3.30	2.98	2.92	2.76	2.55	2.49	2.68	2.68
Hampshire	3.15	2.85	2.97	2.96	2.95	2.87	2.40	2.53	2.63	2.72
Hancock	3.86	3.65	3.54	3.46	3.28	3.22	2.88	2.68	2.64	2.54
Hardy	4.98	3.66	3.50	3.64	3.91	3.29	3.09	3.42	2.98	2.84
Harrison	3.59	3.51	3.49	3.45	3.25	3.31	3.27	3.30	3.20	3.23
Jackson	2.41	2.17	2.08	2.05	1.82	1.53	1.64	1.82	1.77	1.59
Jefferson	1.77	1.64	1.53	1.41	1.30	1.28	1.13	1.10	1.11	1.11
Kanawha	2.40	2.30	2.16	2.07	2.11	2.09	2.13	2.09	2.17	2.24
Lewis	4.88	4.61	4.15	4.18	3.87	3.77	3.38	2.85	2.82	2.40
Lincoln	4.36	3.90	4.01	3.80	3.99	3.72	3.67	3.50	3.40	3.49
Logan	2.58	2.33	2.31	2.08	1.94	1.69	1.78	1.86	1.99	2.01
Marion	1.33	1.35	1.25	1.27	1.29	1.40	1.47	1.42	1.54	1.56
Marshall	2.12	1.93	1.91	1.76	1.51	1.43	1.44	1.46	1.56	1.53
Mason	3.44	3.30	3.29	2.98	3.09	2.90	2.94	3.09	2.89	2.85
Mercer	3.51	3.47	3.41	3.40	3.31	3.37	3.55	3.57	3.40	3.59
Mineral	2.05	2.13	2.05	1.92	1.74	1.59	1.49	1.54	1.39	1.19
Mingo	3.46	3.11	3.23	3.30	3.14	3.16	3.08	2.73	2.79	2.57
Monongalia	2.84	2.74	2.47	2.22	2.16	1.90	1.60	1.53	1.42	1.27
Monroe	3.82	4.32	3.92	3.92	3.73	4.16	3.85	3.98	4.48	4.18
Morgan	1.59	1.57	1.72	1.66	1.97	2.03	1.83	2.13	2.57	2.44
McDowell	6.71	6.80	6.64	6.17	6.59	6.48	6.38	5.94	6.02	6.23
Nicholas	2.56	2.75	2.76	2.80	2.45	2.40	2.43	2.47	2.23	1.90
Ohio	2.61	2.63	2.16	1.98	2.06	2.10	1.99	2.16	2.28	2.27
Pendleton	3.41	2.72	3.24	3.53	3.09	2.03	2.07	1.91	1.89	1.80
Pleasants	2.94	2.61	2.34	2.14	2.08	1.85	1.80	1.44	1.69	2.11
Pocahontas	3.33	2.97	2.77	2.82	2.65	2.41	2.70	2.45	2.56	1.71
Preston	5.66	5.40	4.76	4.30	4.01	3.82	3.30	2.91	2.67	2.38
Putnam	2.14	1.91	2.04	1.95	1.97	1.96	1.86	1.69	1.81	1.80
Raleigh	3.10	2.98	2.80	2.62	2.51	2.24	2.25	2.19	2.03	2.12
Randolph	3.86	3.60	3.23	3.13	3.03	2.89	2.77	2.73	2.83	2.63
Ritchie	5.19	4.79	4.35	3.88	3.90	3.32	2.98	3.11	2.65	2.64
Roane	4.11	3.83	3.70	3.92	3.94	4.11	3.87	3.48	3.67	3.56
Summers	5.69	5.66	4.72	3.89	3.72	3.42	3.29	3.32	3.76	3.82
Taylor	3.14	2.91	2.76	2.80	2.80	2.82	2.84	3.18	2.99	2.93
Tucker	3.09	2.74	2.34	2.25	2.48	1.73	1.61	1.68	1.84	1.46
Tyler	5.19	4.28	3.92	3.82	3.58	3.85	3.17	2.70	2.40	2.23
Upshur	3.59	3.53	3.18	3.07	3.06	2.82	2.74	2.88	2.65	2.69
Wayne	5.65	5.47	5.39	5.03	4.83	4.66	4.36	4.31	4.13	4.07
Webster	4.56	4.58	4.52	3.90	3.68	3.61	3.39	2.92	2.75	2.77
Wetzel	3.27	3.27	3.72	3.49	3.42	3.07	2.85	2.66	2.34	2.29
Wirt	3.93	3.24	3.51	3.61	3.46	2.59	2.67	2.20	2.22	1.76
Wood	2.58	2.36	2.36	2.19	2.14	2.02	1.86	1.84	1.85	1.96
Wyoming	5.51	5.45	5.17	4.66	4.57	4.35	4.28	3.88	4.19	4.44
West Virginia	3.19	3.05	2.94	2.80	2.72	2.61	2.51	2.45	2.44	2.43

Table 5
Percent Change in Number of Students Identified with Intellectual Disability

	Change in Prevalence (percentage)									
LEA	2004 - 2005	2005 - 2006	2006 - 2007	2007 - 2008	2008 - 2009	2009 - 2010	2010 - 2011	2011 - 2012	2012 - 2013	2004/05- 2013/14
Barbour	-0.94	-15.24	7.87	-20.83	18.42	-7.78	-4.82	1.27	12.50	-15.09
Berkeley	11.64	6.68	-3.26	-0.52	-7.81	-2.82	0.00	-4.07	-0.61	-2.09
Boone	-13.01	10.28	-10.17	-12.26	-3.23	-11.11	11.25	5.62	-2.13	-25.20
Braxton	-4.76	-18.75	-10.77	3.45	-3.33	1.72	-5.08	0.00	-16.07	-44.05
Brooke	9.64	14.29	9.62	-8.77	-14.42	-13.48	3.90	10.00	1.14	7.23
Cabell	-2.13	-3.92	-2.27	0.00	-4.18	-3.39	-2.01	-5.12	0.27	-20.68
Calhoun	2.78	2.70	-13.16	-3.03	-9.38	20.69	-22.86	14.81	-6.45	-19.44
Clay	-7.25	23.44	-13.92	8.82	-1.35	-12.33	6.25	-2.94	-7.58	-11.59
Doddridge	-6.52	-4.65	-2.44	0.00	10.00	-15.91	-18.92	3.33	-3.23	-34.78
Fayette	-5.71	-3.03	0.00	-16.15	-11.18	-1.40	0.00	2.13	12.50	-22.86
Gilmer	-5.26	-11.11	-3.13	-12.90	18.52	6.25	0.00	2.94	-2.86	-10.53
Grant	-15.49	0.00	5.00	22.22	-5.19	-1.37	-12.50	12.70	0.00	0.00
Greenbrier	-8.80	-10.66	-11.36	-1.92	-4.58	-8.22	-1.49	6.06	-0.71	-35.65
Hampshire	-7.89	6.67	-0.89	-0.90	-4.55	-18.10	5.81	1.10	1.09	-18.42
Hancock	-5.42	-3.18	-1.97	-4.70	-2.11	-10.79	-6.45	-4.31	-4.50	-36.14
Hardy	-27.59	-2.38	4.88	6.98	-17.39	-6.58	9.86	-10.26	-5.71	-43.10
Harrison	-2.70	-0.76	-1.52	-6.19	1.92	-1.89	-0.27	-3.58	0.86	-13.48
Jackson	-9.09	-4.55	-0.95	-11.54	-16.30	7.79	9.64	-3.30	-11.36	-35.54
Jefferson	-5.15	-4.65	-4.88	-6.84	0.92	-9.09	-3.00	2.06	2.02	-25.74
Kanawha	-4.32	-5.75	-2.97	2.21	-1.00	1.85	-1.98	4.38	2.74	-5.21
Lewis	-7.35	-10.32	0.00	-7.96	-3.85	-12.00	-14.77	-1.33	-14.86	-53.68
Lincoln	-10.98	-1.37	-6.94	7.46	-6.25	0.00	-4.44	-1.55	1.57	-21.34
Logan	-8.33	3.50	-9.46	-5.97	-13.49	5.50	3.48	7.56	-1.56	-19.23
Marion	1.83	-7.21	0.00	1.94	8.57	4.39	-5.04	10.62	0.00	14.68
Marshall	-9.91	-2.00	-10.20	-15.91	-6.76	0.00	0.00	5.80	-1.37	-35.14
Mason	-2.76	2.84	-9.66	1.53	-6.02	3.20	3.10	-6.02	-1.60	-15.17
Mercer	-1.52	-0.62	0.31	-1.86	1.90	5.90	1.17	-4.64	4.56	4.88
Mineral	4.26	-4.08	-7.45	-9.20	-10.13	-8.45	1.54	-10.61	-15.25	-46.81
Mingo	-11.73	3.50	3.38	-3.92	-1.36	-2.76	-12.77	0.81	-8.87	-30.25
Monongalia	-2.86	-8.46	-8.84	-2.20	-10.36	-13.57	-2.91	-5.99	-9.55	-49.29
Monroe	10.13	-9.20	-1.27	-6.41	10.96	-8.64	1.35	10.67	-8.43	-3.80
Morgan	0.00	12.20	-2.17	17.78	1.89	-11.11	14.58	20.00	-4.55	53.66
McDowell	-1.45	-2.57	-12.08	3.86	-1.65	-4.62	-7.49	1.43	0.47	-22.46
Nicholas	5.56	-0.88	1.77	-13.04	-3.00	2.06	1.01	-10.00	-16.67	-30.56
Ohio	0.00	-17.14	-9.48	3.81	1.83	-3.60	10.28	5.93	-1.60	-12.14
Pendleton	-21.95	15.63	8.11	-15.00	-35.29	0.00	-9.09	-5.00	-5.26	-56.10
Pleasants	-10.00	-11.11	-9.38	-3.45	-14.29	-4.17	-21.74	16.67	23.81	-35.00
Pocahontas	-13.33	-10.26	-2.86	-5.88	-9.38	10.34	-12.50	3.57	-34.48	-57.78
Preston	-4.89	-13.83	-9.63	-7.11	-3.28	-14.12	-11.84	-8.96	-10.66	-59.02
Putnam	-9.95	8.14	-3.76	2.79	1.63	-4.28	-7.82	7.27	0.56	-6.81
Raleigh	-3.59	-4.30	-4.49	-3.13	-10.36	0.36	-1.80	-6.59	4.31	-26.52
Randolph	-7.02	-9.43	-4.17	-2.90	-5.97	-5.56	-2.52	4.31	-8.26	-35.09
Ritchie	-4.94	-9.09	-11.43	0.00	-12.90	-12.96	2.13	-14.58	-2.44	-50.62
Roane	-6.60	-2.02	4.12	-0.99	5.00	-7.62	-7.22	0.00	-3.33	-17.92
Summers	-1.09	-17.58	-18.67	-6.56	-7.02	-3.77	1.96	13.46	3.39	-33.70
Taylor	-3.95	-6.85	1.47	-1.45	1.47	-1.45	11.76	-5.26	-1.39	-6.58
Tucker	-10.81	-18.18	-3.70	7.69	-32.14	-10.53	5.88	5.56	-21.05	-59.46
Tyler	-16.05	-8.82	-6.45	-8.62	7.55	-21.05	-15.56	-13.16	-9.09	-62.96
Upshur	-2.22	-8.33	-1.65	-0.84	-8.47	-1.85	4.72	-8.11	0.98	-23.70
Wayne	-3.04	0.00	-6.51	-3.87	-5.63	-7.67	-1.23	-3.43	-2.26	-29.21
Webster	1.35	-2.67	-13.70	-9.52	0.00	-8.77	-15.38	-6.82	-2.44	-45.95
Wetzel	-4.72	12.87	-7.89	-4.76	-12.00	-7.95	-6.17	-13.16	-4.55	-40.57
Wirt	-17.50	9.09	0.00	-8.33	-24.24	8.00	-18.52	4.55	-21.74	-55.00
Wood	-9.86	0.00	-7.50	-2.36	-5.88	-7.72	-1.59	0.00	5.26	-26.76
Wyoming	-0.43	-7.39	-9.39	-2.07	-4.23	0.00	-9.94	9.82	5.59	-18.18
West Virginia	-4.33%	-2.97%	-4.46%	-2.76%	-4.18%	-3.86%	-2.18%	-0.43%	-0.99%	-23.39%

Table 6
Percent Change in Enrollment

	Change in Enrollment (percentage)									
LEA	2004 - 2005	2005 - 2006	2006 - 2007	2007 - 2008	2008 - 2009	2009 - 2010	2010 - 2011	2011 - 2012	2012 - 2013	2004/05-2013/14
Barbour	-0.54	-1.32	0.04	1.72	-4.55	0.85	-1.76	-0.57	0.53	-5.58
Berkeley	4.27	4.47	3.35	2.05	1.35	1.57	1.59	0.94	0.28	21.61
Boone	-0.13	0.74	0.02	0.46	1.08	-2.72	0.18	-0.59	0.38	-0.63
Braxton	-1.87	-1.87	-3.17	-0.09	-2.58	-0.45	-2.84	-0.05	-1.30	-13.39
Brooke	-1.62	0.20	-1.81	-2.78	-0.56	-1.20	-1.46	0.54	-2.58	-10.78
Cabell	0.62	-0.19	0.36	1.43	0.00	1.42	1.42	0.77	0.82	6.83
Calhoun	-0.76	-2.12	-0.17	-2.17	-1.95	1.63	1.34	-4.75	-1.29	-9.94
Clay	-3.62	1.43	-1.56	0.20	0.84	1.37	-1.16	0.64	-4.13	-6.00
Doddridge	-3.19	-0.24	-0.48	-2.27	-3.07	0.00	-1.97	1.31	-0.17	-9.74
Fayette	-0.66	-0.22	-0.48	-0.22	-0.76	1.02	0.69	-0.10	-0.83	-1.58
Gilmer	-5.45	1.99	-3.19	-0.11	-0.21	0.43	-1.06	1.29	-4.44	-10.51
Grant	-0.30	0.70	-0.20	-1.20	-2.03	-2.48	-0.74	-1.76	-1.14	-8.82
Greenbrier	0.68	-0.09	-1.90	0.40	0.71	-0.72	1.05	-1.49	-0.61	-2.00
Hampshire	1.66	2.56	-0.66	-0.53	-1.99	-1.72	0.06	-2.59	-2.20	-5.42
Hancock	0.05	-0.16	0.33	0.51	-0.37	-0.07	0.56	-3.00	-0.50	-2.68
Hardy	-1.59	2.18	0.73	-0.30	-1.95	-0.43	-0.78	3.03	-1.15	-0.39
Harrison	-0.34	-0.33	-0.39	-0.38	0.04	-0.61	-1.11	-0.63	-0.20	-3.89
Jackson	0.76	-0.18	0.20	0.12	-0.53	0.12	-0.97	-0.64	-1.03	-2.15
Jefferson	2.63	2.15	3.18	1.19	2.35	2.89	-0.01	1.31	1.15	18.10
Kanawha	0.07	0.38	0.88	0.41	0.06	-0.08	-0.10	0.42	-0.60	1.43
Lewis	-1.94	-0.55	-0.59	-0.67	-1.34	-1.70	1.15	-0.34	-0.08	-5.92
Lincoln	-0.61	-4.12	-1.78	2.36	0.55	1.46	0.27	1.27	-1.20	-1.94
Logan	1.54	4.46	0.53	0.85	-1.15	0.28	-0.87	0.52	-2.41	3.65
Marion	0.67	0.16	-1.64	0.07	-0.07	-0.15	-1.78	1.71	-0.74	-1.80
Marshall	-1.09	-0.98	-2.79	-2.08	-1.33	-0.89	-1.09	-0.74	0.36	-10.17
Mason	1.38	3.30	-0.18	-2.30	0.21	1.69	-1.60	0.28	-0.25	2.45
Mercer	-0.32	1.03	0.87	0.57	0.15	0.62	0.48	0.17	-0.91	2.67
Mineral	0.57	-0.65	-0.96	0.35	-2.00	-1.95	-2.08	-0.89	-1.34	-8.64
Mingo	-1.86	-0.52	1.42	1.03	-2.18	-0.28	-1.47	-1.44	-0.86	-6.04
Monongalia	0.49	1.75	1.18	0.78	1.61	2.60	1.85	0.91	1.48	13.37
Monroe	-2.71	0.15	-1.34	-1.66	-0.51	-1.23	-1.93	-1.70	-1.73	-11.99
Morgan	1.63	2.52	1.38	-0.99	-1.37	-1.43	-1.18	-0.54	0.31	0.23
McDowell	-2.75	-0.25	-5.29	-2.73	-0.03	-3.13	-0.67	0.06	-2.83	-16.42
Nicholas	-1.78	-1.42	0.56	-0.75	-1.00	0.84	-0.61	-0.39	-1.96	-6.37
Ohio	-0.67	0.68	-0.93	-0.57	0.11	1.61	1.84	0.29	-1.04	1.29
Pendleton	-2.00	-3.06	-0.79	-2.74	-1.45	-1.84	-1.88	-3.64	-0.60	-16.65
Pleasants	1.40	-0.65	-1.31	-0.44	-3.49	-1.62	-1.96	-0.80	-0.88	-9.41
Pocahontas	-2.81	-3.80	-4.74	0.33	-0.58	-1.58	-3.21	-1.05	-1.85	-17.81
Preston	-0.36	-2.18	0.04	-0.57	1.51	-0.61	0.15	-0.69	0.17	-2.53
Putnam	0.71	1.29	1.01	1.52	1.88	1.20	1.54	0.09	1.22	10.94
Raleigh	0.16	1.94	1.87	1.34	0.19	0.26	0.68	1.00	-0.10	7.57
Randolph	-0.23	0.86	-0.88	0.25	-1.56	-1.42	-0.93	0.45	-1.12	-4.52
Ritchie	2.95	0.25	-0.87	-0.50	2.33	-2.95	-2.15	0.32	-2.13	-2.88
Roane	0.19	1.28	-1.72	-1.40	0.63	-1.92	3.19	-5.03	-0.49	-5.35
Summers	-0.56	-1.06	-1.45	-2.23	1.04	0.19	0.84	0.32	1.72	-1.24
Taylor	3.72	-1.68	-0.04	-1.54	0.99	-2.24	-0.21	0.79	0.58	0.25
Tucker	0.75	-4.39	0.17	-2.42	-2.75	-3.92	1.90	-3.91	-0.19	-14.04
Tyler	1.86	-0.44	-4.11	-2.57	0.20	-4.25	-0.85	-2.42	-1.82	-13.65
Upshur	-0.80	1.93	1.94	-0.49	-0.96	1.10	-0.23	-0.10	-0.83	1.51
Wayne	0.08	1.60	0.17	0.14	-2.20	-1.43	0.07	0.74	-0.83	-1.70
Webster	0.80	-1.41	0.06	-4.02	1.74	-2.73	-1.89	-0.80	-3.15	-10.96
Wetzel	-4.75	-0.71	-1.93	-2.83	-1.92	-0.70	0.39	-1.30	-2.16	-14.91
Wirt	0.29	0.59	-2.83	-4.31	1.36	4.45	-0.99	3.50	-1.26	0.49
Wood	-1.22	-0.17	-0.26	-0.28	0.04	-0.18	-0.05	-0.85	-0.61	-3.53
Wyoming	0.64	-2.23	0.46	-0.05	0.51	1.63	-0.76	1.74	-0.33	1.58
West Virginia	0.11%	0.58%	0.15%	0.11%	-0.07%	0.12%	0.02%	0.04%	-0.46%	0.59%

Table 7
LEAs Arranged into Rank Order and Quartiles by Prevalence

	LEA									
Rank	2004 - 2005	2005 - 2006	2006 - 2007	2007 - 2008	2008 - 2009	2009 - 2010	2010 - 2011	2011 - 2012	2012 - 2013	2013 - 2014
Q1										
1	McDowell	McDowell	McDowell	McDowell	McDowell	McDowell	McDowell	McDowell	McDowell	McDowell
2	Summers	Summers	Wayne	Wayne	Wayne	Wayne	Wayne	Wayne	Monroe	Wyoming
3	Preston	Wayne	Wyoming	Wyoming	Wyoming	Wyoming	Wyoming	Monroe	Wyoming	Monroe
4	Wayne	Wyoming	Preston	Preston	Preston	Monroe	Roane	Wyoming	Wayne	Wayne
5	Wyoming	Preston	Summers	Lewis	Lincoln	Roane	Monroe	Gilmer	Grant	Grant
6	Tyler	Ritchie	Webster	Roane	Roane	Tyler	Grant	Mercer	Summers	Summers
7	Ritchie	Lewis	Ritchie	Monroe	Hardy	Preston	Lincoln	Lincoln	Gilmer	Gilmer
8	Hardy	Webster	Lewis	Webster	Ritchie	Lewis	Gilmer	Roane	Roane	Barbour
9	Lewis	Monroe	Lincoln	Summers	Grant	Grant	Mercer	Hardy	Mercer	Mercer
10	Webster	Tyler	Monroe	Ritchie	Lewis	Doddridge	Webster	Grant	Lincoln	Roane
11	Lincoln	Barbour	Tyler	Tyler	Monroe	Lincoln	Lewis	Summers	Barbour	Lincoln
12	Roane	Lincoln	Clay	Lincoln	Summers	Barbour	Barbour	Clay	Clay	Harrison
13	Barbour	Roane	Wetzel	Barbour	Webster	Webster	Preston	Harrison	Harrison	Clay
14	Greenbrier	Gilmer	Roane	Hardy	Clay	Clay	Summers	Barbour	Taylor	Taylor
Q2										
15	Wirt	Cabell	Cabell	Wirt	Tyler	Summers	Harrison	Taylor	Hardy	Mason
16	Randolph	Greenbrier	Hancock	Pendleton	Wirt	Gilmer	Tyler	Ritchie	Mason	Hardy
17	Hancock	Hardy	Wirt	Wetzel	Cabell	Mercer	Doddridge	Mason	Calhoun	Cabell
18	Cabell	Hancock	Hardy	Cabell	Wetzel	Ritchie	Cabell	Cabell	Cabell	Webster
19	Monroe	Randolph	Harrison	Hancock	Doddridge	Harrison	Calhoun	Webster	Randolph	Brooke
20	Gilmer	Upshur	Barbour	Harrison	Mercer	Cabell	Hardy	Preston	Lewis	Hampshire
21	Harrison	Harrison	Mercer	Mercer	Hancock	Hardy	Clay	Upshur	Mingo	Calhoun
22	Upshur	Mercer	Doddridge	Clay	Harrison	Hancock	Mingo	Lewis	Webster	Upshur
23	Doddridge	Doddridge	Greenbrier	Mingo	Mingo	Mingo	Ritchie	Mingo	Greenbrier	Greenbrier
24	Grant	Braxton	Calhoun	Gilmer	Mason	Wetzel	Mason	Randolph	Doddridge	Ritchie
25	Mercer	Mason	Mason	Doddridge	Pendleton	Mason	Hancock	Tyler	Preston	Randolph
26	Mingo	Wetzel	Gilmer	Brooke	Upshur	Randolph	Wetzel	Hancock	Ritchie	Doddridge
27	Mason	Wirt	Pendleton	Grant	Brooke	Hampshire	Taylor	Wetzel	Upshur	Mingo
Q3										
29	Pendleton	Calhoun	Randolph	Upshur	Hampshire	Taylor	Upshur	Braxton	Brooke	Morgan
30	Pocahontas	Mingo	Upshur	Greenbrier	Barbour	Greenbrier	Pocahontas	Hampshire	Hampshire	Lewis
31	Clay	Grant	Grant	Mason	Greenbrier	Calhoun	Wirt	Greenbrier	Braxton	Fayette
32	Wetzel	Raleigh	Hampshire	Hampshire	Gilmer	Brooke	Braxton	Nicholas	Morgan	Preston
33	Hampshire	Pocahontas	Brooke	Calhoun	Calhoun	Braxton	Greenbrier	Pocahontas	Pocahontas	Wetzel
34	Taylor	Taylor	Raleigh	Pocahontas	Taylor	Wirt	Nicholas	Brooke	Tyler	Ohio
35	Raleigh	Fayette	Fayette	Fayette	Pocahontas	Pocahontas	Hampshire	Calhoun	Wetzel	Kanawha
36	Tucker	Hampshire	Pocahontas	Taylor	Braxton	Nicholas	Brooke	Wirt	Ohio	Tyler
37	Fayette	Nicholas	Nicholas	Nicholas	Raleigh	Raleigh	Raleigh	Raleigh	Nicholas	Braxton
38	Calhoun	Monongalia	Taylor	Raleigh	Tucker	Fayette	Kanawha	Ohio	Wirt	Raleigh
39	Pleasants	Tucker	Braxton	Braxton	Nicholas	Ohio	Pendleton	Morgan	Kanawha	Pleasants
40	Monongalia	Pendleton	Boone	Boone	Fayette	Kanawha	Fayette	Kanawha	Fayette	Boone
41	Boone	Ohio	Monongalia	Berkeley	Berkeley	Morgan	Ohio	Fayette	Boone	Logan
29	Pendleton	Calhoun	Randolph	Upshur	Hampshire	Taylor	Upshur	Braxton	Brooke	Morgan
Q4										
42	Ohio	Pleasants	Berkeley	Tucker	Monongalia	Berkeley	Berkeley	Boone	Raleigh	Wood
43	Wood	Brooke	Wood	Monongalia	Wood	Pendleton	Wood	Pendleton	Logan	Nicholas
44	Logan	Berkeley	Tucker	Wood	Kanawha	Wood	Putnam	Berkeley	Pendleton	Berkeley
45	Nicholas	Wood	Pleasants	Pleasants	Pleasants	Putnam	Morgan	Logan	Wood	Pendleton
46	Jackson	Boone	Logan	Logan	Ohio	Boone	Pleasants	Wood	Tucker	Putnam
47	Kanawha	Logan	Ohio	Kanawha	Boone	Monongalia	Logan	Jackson	Berkeley	Wirt
48	Brooke	Kanawha	Kanawha	Jackson	Putnam	Pleasants	Boone	Putnam	Putnam	Pocahontas
49	Berkeley	Jackson	Jackson	Ohio	Morgan	Tucker	Jackson	Tucker	Jackson	Jackson
50	Putnam	Mineral	Mineral	Putnam	Logan	Logan	Tucker	Mineral	Pleasants	Marion
51	Marshall	Marshall	Putnam	Mineral	Jackson	Mineral	Monongalia	Monongalia	Marshall	Marshall
52	Mineral	Putnam	Marshall	Marshall	Mineral	Jackson	Mineral	Marshall	Marion	Tucker
53	Jefferson	Jefferson	Morgan	Morgan	Marshall	Marshall	Marion	Pleasants	Monongalia	Monongalia
54	Morgan	Morgan	Jefferson	Jefferson	Jefferson	Marion	Marshall	Marion	Mineral	Mineral
55	Marion	Marion	Marion	Marion	Marion	Jefferson	Jefferson	Jefferson	Jefferson	Jefferson

Table 8
ANOVA Summary of Region as Predictor

		Sum of Squares	df	Mean Square	f	Significance
2004	Between Groups	19.024	7	2.718	2.482	.030
	Within Groups	51.463	47	1.095		
	Total	70.487	54			
2005	Between Groups	23.667	7	3.381	3.777	.003
	Within Groups	42.075	47	.895		
	Total	65.741	54			
2006	Between Groups	15.612	7	2.230	2.669	.021
	Within Groups	39.280	47	.836		
	Total	54.892	54			
2007	Between Groups	11.480	7	1.640	2.160	.055
	Within Groups	35.682	47	.759		
	Total	47.162	54			
2008	Between Groups	11.132	7	1.590	1.954	.082
	Within Groups	38.242	47	.814		
	Total	49.373	54			
2009	Between Groups	12.755	7	1.822	2.160	.055
	Within Groups	39.654	47	.844		
	Total	52.409	54			
2010	Between Groups	14.058	7	2.008	2.869	.014
	Within Groups	32.900	47	.700		
	Total	46.958	54			
2011	Between Groups	12.723	7	1.818	3.073	.009
	Within Groups	27.795	47	.591		
	Total	40.517	54			
2012	Between Groups	14.292	7	2.042	3.472	.004
	Within Groups	27.638	47	.588		
	Total	41.930	54			
2013	Between Groups	16.998	7	2.428	3.754	.003
	Within Groups	30.402	47	.647		
	Total	47.400	54			

Table 9
Post-Hoc Analysis of Region as Predictor

	I, J	Mean Difference (I-J)	Standard Error	Significance	95% Confidence Interval Lower	95% Confidence Interval Upper
2004	RESA 1, RESA 3	2.10%	0.68%	0.059	-0.05%	4.24%
	RESA 1, RESA 8	1.88066%*	0.57%	0.034	0.09%	3.67%
2005	RESA 1, RESA 3	2.35433%*	0.61%	0.008	0.42%	4.29%
	RESA 1, RESA 6	1.97712%*	0.57%	0.024	0.16%	3.79%
	RESA 1, RESA 8	2.28519%*	0.51%	0.001	0.66%	3.91%
2006	RESA 1, RESA 3	1.79%	0.59%	0.07	-0.08%	3.66%
	RESA 1, RESA 8	1.88733%*	0.49%	0.009	0.32%	3.45%
2007	RESA 1, RESA 8	1.54015%*	0.47%	0.039	0.05%	3.03%
2009	RESA 1, RESA 8	1.64236%*	0.50%	0.035	0.07%	3.22%
2010	RESA 1, RESA 3	1.72263%*	0.54%	0.048	0.01%	3.44%
	RESA 1, RESA 6	1.64171%*	0.51%	0.042	0.04%	3.25%
	RESA 1, RESA 8	1.71219%*	0.45%	0.009	0.28%	3.15%
2011	RESA 1, RESA 3	1.55%	0.50%	0.056	-0.02%	3.13%
	RESA 1, RESA 5	1.44580%*	0.42%	0.022	0.13%	2.76%
	RESA 1, RESA 6	1.54144%*	0.47%	0.035	0.06%	3.02%
	RESA 1, RESA 8	1.57702%*	0.42%	0.009	0.26%	2.89%
2012	RESA 1, RESA 3	1.66550%*	0.49%	0.03	0.10%	3.24%
	RESA 1, RESA 4	1.49555%*	0.44%	0.029	0.09%	2.90%
	RESA 1, RESA 5	1.59144%*	0.41%	0.008	0.28%	2.90%
	RESA 1, RESA 6	1.68875%*	0.46%	0.015	0.22%	3.16%
	RESA 1, RESA 7	1.34622%*	0.38%	0.021	0.13%	2.56%
	RESA 1, RESA 8	1.70152%*	0.41%	0.004	0.39%	3.01%
2013	RESA 1, RESA 3	1.77297%*	0.52%	0.027	0.13%	3.42%
	RESA 1, RESA 4	1.78908%*	0.46%	0.008	0.32%	3.26%
	RESA 1, RESA 5	1.74202%*	0.43%	0.005	0.36%	3.12%
	RESA 1, RESA 6	1.79023%*	0.49%	0.013	0.25%	3.33%
	RESA 1, RESA 7	1.51429%*	0.40%	0.01	0.24%	2.79%
	RESA 1, RESA 8	1.83505%*	0.43%	0.003	0.46%	3.21%

Table 10
ANOVA Summary of County Size as Predictor

		Sum of Squares	df	Mean Square	f	Significance
2004	Between Groups	9.156	4	2.289	1.866	0.131
	Within Groups	61.331	50	1.227		
	Total	70.487	54			
2005	Between Groups	6.368	4	1.592	1.341	0.268
	Within Groups	59.373	50	1.187		
	Total	65.741	54			
2006	Between Groups	5.845	4	1.461	1.49	0.219
	Within Groups	49.046	50	0.981		
	Total	54.892	54			
2007	Between Groups	6.107	4	1.527	1.86	0.132
	Within Groups	41.054	50	0.821		
	Total	47.162	54			
2008	Between Groups	6.283	4	1.571	1.823	0.139
	Within Groups	43.09	50	0.862		
	Total	49.373	54			
2009	Between Groups	5.605	4	1.401	1.497	0.217
	Within Groups	46.804	50	0.936		
	Total	52.409	54			
2010	Between Groups	4.705	4	1.176	1.392	0.25
	Within Groups	42.253	50	0.845		
	Total	46.958	54			
2011	Between Groups	3.301	4	0.825	1.109	0.363
	Within Groups	37.216	50	0.744		
	Total	40.517	54			
2012	Between Groups	3.88	4	0.97	1.275	0.292
	Within Groups	38.05	50	0.761		
	Total	41.93	54			
2013	Between Groups	2.36	4	0.59	0.655	0.626
	Within Groups	45.041	50	0.901		
	Total	47.4	54			

Table 11
Correlation of County Size and ID Prevalence

	2004 - 2005	2005 - 2006	2006 - 2007	2007 - 2008	2008 - 2009	2009 - 2010	2010 - 2011	2011 - 2012	2012 - 2013	2013 - 2014
Pearson Correlation	-.338*	-.284*	-.283*	-.317*	-.316*	-.299*	-.297*	-0.265	-.296*	-0.219
Sig. (2-tailed)	0.012	0.036	0.036	0.018	0.019	0.027	0.028	0.051	0.028	0.108
N	55	55	55	55	55	55	55	55	55	55

APPENDIX B:
LETTER FROM INSTITUTIONAL RESEARCH BOARD

MARSHALL UNIVERSITY
www.marshall.edu

Office of Research Integrity
Institutional Review Board

April 2, 2015

Lanai Jennings, PhD, NCSP
Assistant Professor
Marshall University College of Education and Professional Development
School Psychology Program
100 Angus E. Peyton Drive Room GC 108
South Charleston, WV 25303

Dear Dr. Jennings:

This letter is in response to the submitted thesis abstract for Margaret M. Stephens to examine the prevalence of Intellectual Disability (ID) in each of West Virginia's Local Educational Agencies (LEAs). After assessing the abstract it has been deemed not to be human subject research and therefore exempt from oversight of the Marshall University Institutional Review Board (IRB). The Code of Federal Regulations (45CFR46) has set forth the criteria utilized in making this determination. Since the information in this study does not involve human subjects as defined in the above referenced instruction it is not considered human subject research. If there are any changes to the abstract you provided then you would need to resubmit that information to the Office of Research Integrity for review and a determination.

I appreciate your willingness to submit the abstract for determination. Please feel free to contact the Office of Research Integrity if you have any questions regarding future protocols that may require IRB review.

Sincerely,

Bruce F. Day, ThD, CIP
Director