THE PREDICTIVE VALIDITY OF THE DIAL-3 KINDERGARTEN READINESS SCREENING ASSESSMENT AS IT RELATES TO READING AND MATH ACADEMIC ACHIEVEMENT IN THE FOURTH GRADE

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ABSTRACT

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The purpose of this research was to examine the relationship between pre-kindergarten student test scores on a kindergarten readiness assessment, the Developmental Indicators for Assessment of Learning (DIAL-3), and test scores for the same students four years later on the mathematics and reading sections of the Ohio Fourth Grade State Achievement Test. Determining if the DIAL-3 readiness assessment had long-range predictive validity was the goal of this dissertation study.

The design of the study was correlational. The researcher used historical data from at least 48 students from each of three district types (rural, suburban, and urban) as the sample for this study. Utilizing a sampling method of stratified-cluster, 208 students were randomly selected for inclusion in this study. In addition, the researcher analyzed and discussed influential variables, which affected the results. Age, ethnicity, gender, district type, half-day programs were among the variables analyzed. The targeted population was diverse in socio-economic status, race, and gender and consisted of students in Northwestern Ohio.

To address the premise of this study, three research questions were developed and analyzed. Utilizing a Pearson Correlation Coefficient to calculate the relationship between the variables, the researcher was able to identify practical significance in many analyses. Although a low correlation existed in regards to the White, rural population, an increase in relationship existed among urban, children of color. Additionally, gender was analyzed to influence the
correlation between the DIAL-3 and the OAT in Reading and Math. This study revealed large variances between district type, gender, and ethnicity in regards to correlational patterns.

Close examination confirms that the variables in this study significantly influence one another and provide an opportunity to predict future achievement. Specifically, according to this research data, educators in urban districts can use the DIAL-3 to identify patterns of achievement. The ability to identify academic readiness in relation to future academic growth was evident. This study revealed the practicality of utilizing the DIAL-3 in developing policy for academic interventions and mediation.
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CHAPTER I. INTRODUCTION

Background of the Problem

The assessment process of placing students into kindergarten has become more complex in the past few years. Historically, if a child was five years old before a specified date, automatic entrance was granted (Meisels, 1998; NAEYC, 2000). More specifically, children were perceived to be developmentally ready to enter formalized schooling. The first event that caused early childhood professionals to examine pre-kindergarten assessment was the release of the Nation at Risk report of 1983 (Meisels, 1998). The report noted that education in the United States was lacking in content in comparison to other developed countries. This led to efforts aimed at raising standards and thus the curriculum to a higher level; promoting the escalation of academic demands placed on children entering school (Meisels, 1998; NAEYC, 2000). In 1990, President Bush and the governors of the United States established six National Education Goals that changed the way early childhood education was viewed. The first of the education goals stated: “All children in America will start school ready to learn” (National Education Goals Panel, 1991). With this renewed commitment to early childhood education and the improvement of academic achievement came an onslaught of readiness testing instruments (NAEYC, 2000). Screening, the process of testing children to identify developmental skill, became the norm (Shepard, 1997). While there is no federal mandate, many states require that schools administer some form of a pre-kindergarten screening instrument (Costenbader, Rohrer, & DiFonzo, 2000).

The primary purpose of pre-kindergarten screening is to assess preparedness (Pianta & LaParo, 2003). Specifically, educational professionals are interested in determining if special needs exist (Costenbader, Rohrer, & DiFonzo, 2000). However, few studies have been conducted on the predictive nature of kindergarten readiness assessments. Therefore, this study
will examine the relationship between student assessment scores on one kindergarten screening instrument and future academic achievement in middle elementary school. In the early 1990s educational professionals developed policies against the use of readiness testing; stating that standardized testing of young children was inappropriate (Sluja, Scott-Little, & Clifford, 2000). Nonetheless, the need to meet the Individuals with Disabilities Education Act (IDEA) requirements which identify children with disabilities prompted states to mandate formal screening procedures (Sluja, Scott-Little, & Clifford). Consequently, these practices resemble standardized testing in many school districts. Currently, school districts can employ a variety of pre-kindergarten screening instruments that are based on readiness skills assessment (Ellwein, Walsh, Eads, & Miller, 1991). Yet, determining a common definition for readiness is difficult. In fact, no state has an official definition of readiness (Sluja, Scott-Little, & Clifford, 2000). However, there are four accepted views on readiness that the literature discusses: The Idealist/Nativist, the Empiricist/Environmentalist, the Social Constructivist, and the Interactionist (Meisels, 1998). Each view identifies elements that pertain to issues of learner readiness and will be discussed in depth in the literature review.

As a result of using pre-kindergarten assessment instruments, districts have identified benefits of screening pre-kindergarten students (Mehaffie & McCall, 2002; Sluja, Scott-Little, & Clifford, 2000). One main reason includes identifying academic potential (or at-risk characteristics) as the focus of screening children prior to entrance into formal schooling (Shepard, 1997). Determining the student’s early needs in order to best facilitate learning is the intended goal of a kindergarten screening program. Another benefit of screening pre-kindergarten students is to evaluate the current pre-kindergarten assessment program or screening practice (Maxwell & Clifford, 2004; Sluja, Scott-Little, & Clifford, 2000). According
to the National Association of Early Childhood Specialists (2000), teachers and administrators become informed about assessment strategies and techniques and are encouraged to view their use responsibly. This responsibility includes the use of approaches that have been proven to raise academic achievement in young children and requires a critique of current policy and practice to determine if adaptations are warranted.

Although kindergarten readiness entry scores appear to be reliable indicators of kindergarten achievement success, Kurdek and Sinclair (2001) posit that dependence on these scores alone to identify at risk students, and future achievement presents several problems. According to Kurdek and Sinclair, the most frequently used tests vary dramatically in the areas assessed and therefore, the scores are not comparative. Secondly, some researchers claim that the scores predict academic achievement only through the end of first and possibly second grade (Agostin & Bain, 1997). However, using kindergarten readiness assessment scores as a data source to facilitate curricular services for students beyond the second grade is an essential component in the defense of screening instrument utilization (McLoughlin & Rausch, 1990). An additional problem, as purposed by Kurdek and Sinclair (2001), with depending on readiness tests to determine academic achievement, is the lack of support linking some of the scores to specific academic success; for example, reading or math. Another issue is the notion that older kindergarteners’ test scores are more valid in predicting later achievement than those of younger kindergarteners (Ellwein, Walsh, Eads, & Miller, 1991; Kurdek & Sinclair, 2001). An additional concern is that gender specific scores have been less predictive for boys than for girls. This may be due to the fact that girls develop verbal skills at earlier stages than boys. Therefore, more boys than girls are being identified as not ready for kindergarten or needing special intervention (Ellwein, Walsh, Eads, & Miller, 1991; Kurdek & Sinclair; Shepard, 1997).
Many of the studies on the validity and reliability of predictive analysis of kindergarten assessment sampled students from White, middle class areas (Augustyniak, Cook-Cottone, & Calabrese, 2004). The sampled demographics need to be ethnically, as well as economically diverse in order for a true representation of reliable and valid data. School systems need to administer appropriate measures to benefit the culture of the school community. Awareness of the available instruments and the most effective tests for diverse systems needs to be a priority (McLoughlin & Rausch, 1990).

Although many factors influence a child’s readiness, some assessment instruments claim to be predictive in nature relative to academic achievement. According to some researchers, (Mehaffie & McCall, 2002; National Association of Early Childhood Specialist, 2002), determining school readiness is a combination of elements of a child’s development and should not be used exclusively as a predictive tool. School readiness assessments are designed to be used as a tool for guiding instruction, strengthening communication, and influencing support policies (Meisels, 1999). However, some schools use these measures to identify individuals “not ready” possibly leading to tracking, an inequitable and ineffective practice associated with academic failure (Agostin & Bain, 1997; Ellwein, Walsh, Eads, & Miller 1991; Shepard, 1997).

The National Association of Early Childhood Specialists (NAECS, 2002) cites four questionable practices that occur when using kindergarten readiness assessment. The first is the inappropriate use of the screening instrument or test. The NAECS contends that some school systems use these instruments to create homogeneity within a classroom; placing emphasis on reducing variability which is perceived to create an easier instructional environment. The second questionable practice is the discouragement or denial of kindergarten entrance. Often parents are advised to withhold a child from kindergarten based on what may be perceived as a well-
intentioned effort to protect the child from the high expectations placed on current kindergarteners. Furthermore, traditional kindergarten curriculum programs demand that a child be ready for school instead of tailoring the program to fit the individual needs of the child. Another concern is the questionable practice of “labeling” the students ready or not. Schools have developed transitional classes for students who are withheld from kindergarten entry. Basically, this delay is in effect an early retention. Consequently, children deemed not ready for kindergarten are perceived as failures before they begin formalized schooling. Some research suggests that the use of retention in the early grades has increased and places the socio-emotional development of a child at risk; possibly leading to failure, school apathy, and demoralization of the child (Agostin & Bain, 1997; Meisels, 1999; NAECs, 2002).

According to an estimate given by The National Center for Educational Statistics (1999), over 12 million students are enrolled in the public school system in the United States. Of the 12 million, almost 22% have developmental or behavioral disorders. Only 32% of those identified with special needs are female. Readiness assessments seem to be gender weighted, identifying more boys than girls as not ready for school (Ellwein, Walsh, Eads, & Miller, 1991; Shepard, 1997). However, Kurdek and Sinclair (2001) argue that the validity of assessment instruments claiming to predict future academic achievement does not differ significantly for boys and girls. Yet, more boys than girls are being withheld from formalized schooling and placed in readiness or junior kindergarten (Ellwein et al.; Kurdek & Sinclair; Shepard).

Study Rationale

Currently most educators agree that pre-kindergarten screening exams help identify students at-risk and/or students eligible for special services (Scott & Delgado, 2003). While screening assessments may serve a positive role in the course of student learning, a host of
negative implications exist (Agostin & Bain, 1997; Ellwein et al., 1991; Kurdek & Sinclair, 2001; Meisels, 1999; Shepard, 1997). This study is important because this researcher found no studies that examined if a relationship exists between the DIAL-3 (the Developmental Indicators for Assessment of Learning), which is an individually administered pre-kindergarten screening instrument that measures three domains of behavior: motor, conceptual, and language (Costenbader, Rohrer, DiFonzo, 2000), and academic achievement in the future grades. In this examination the DIAL-3 is utilized because it is a commonly used readiness assessment instrument that claims to measure developmental readiness. This research will assist in determining the appropriateness of the assessment. Therefore, the need to analyze the predictive nature of a test is crucial in the attempt to validate the use of such instruments (Bishop, 2003).

Kindergarten readiness is determined by more than age (Augustyniak et al., 2004; Duncan & Rafter, 2005). Therefore, in the school districts’ best interest, focusing on using the assessments to resolve educational problems is optimal (Meisels, 1999). Conceptualizing readiness for formalized schooling as a measurable set of skills, both academic and behavioral, promotes the careful and appropriate practice of readiness assessments to be used for the intended design (Meisels, 1999).

Purpose of the Study

The purpose of this study is to examine the relationship between pre-kindergarten student test scores on a kindergarten readiness assessment, the Developmental Indicators for Assessment of Learning (DIAL-3) instrument, and test scores for the same students four years later on the mathematics and reading sections of the Ohio Fourth Grade State Achievement Test. The predictor variable will be the pre-kindergarten student test scores from the DIAL-3. The criterion variable will be fourth grade student achievement test scores. In an attempt to verify the validity
across a diverse sample, the researcher will analyze the data from a rural, suburban, and an urban district.

Research Questions

Research Question 1: Is there a significant correlation between pre-kindergarten student test scores on the Developmental Indicators for Assessment of Learning (DIAL-3) instrument and test scores for the same students four years later on the mathematics and reading sections of the Ohio Fourth Grade State Achievement Test?

Research Question 2: Does a partial correlation exist between a student’s age at the time the DIAL-3 instrument is completed and the predictability of success on the Ohio Fourth Grade State Achievement Test?

Research Question 3: Is there a significant correlation between pre-kindergarten student test scores on the Developmental Indicators for Assessment of Learning (DIAL-3) instrument and test scores for the same students four years later on the mathematics and reading sections of the Ohio Fourth Grade State Achievement Test by (3a) type of district (urban, rural, or suburban), (3b) gender, and (3c) ethnicity?

Significance of Study

A study of the relationship between the commonly used kindergarten readiness assessment test, the DIAL-3, and student achievement levels in reading and mathematics at the fourth grade is important for several reasons. The findings will create a statistical picture of the effect kindergarten readiness assessment scores have on educational programming. First, it is important for educators implementing policy and practice to understand the extent to which the DIAL-3 serves as a predictor of student achievement. Secondly, research is still needed to ensure that the educational system provides young children with needed services and resources.
Finding connections or relationships between screening instruments and academic achievement is in the best interest of a school system. These findings may be used to inform both practice and policy.

Determining if a relationship exists between kindergarten readiness assessment scores on the DIAL-3 and scores on the Ohio Fourth Grade State Achievement Test in math and reading, will provide school systems with information that will help guide them in planning and implementing appropriate programs and curriculum. The best interest of the student is the optimal goal.

“Public schools cannot ethically select some children who are eligible under the law and reject others” (NAECS, 2002, p.4). Long-range predictive validity is needed to continue with procedures that cause questionable results and practices (Augustyniak et al., 2004). Dramatic changes in the curriculum have resulted in higher expectations for students entering kindergarten (NAEYC, 2002). School districts will be able to determine the strengths and weaknesses of using the DIAL-3 and the connection to the new curriculum.

This study will allow constructive decision-making to occur in regards to the needs of the students and instructional methodology. Discussion of the present use of the DIAL-3 in readiness assessment will initiate discussions on the proper procedures and purpose of such instruments. Findings will provide insights on the influence of district type, suburban, rural, or urban, on the assessment scores. Individual districts will gain valuable information to make decisions for the facilitation of growth and development of their unique mix of students. Tracking, labeling, retention or “holding out” of students will not be acceptable choices (Meisels, 1998; Shepard, 1997). The data will initiate dialogue between parents, schools, and the community concerning the value of assessment at the pre-kindergarten level.
Definitions of Terms

*Academic Potential:* the ability to achieve in curricular activities in traditional school settings.

*Assessment:* a process of determining whether particular characteristics are present in an individual or program and the amount or extent of them (NAEYC, 2000).

*DIAL-3 (Developmental Indicators for Assessment of Learning):* An individually administered screening instrument that measures three domains of behavior: motor, conceptual, and language skills (Costenbader, Rohrer, DiFonzo, 2000).

*Predictor:* the ability to measure [future achievement].

*Readiness:* refers to a child’s relative preparedness to participate in the educational curriculum (Pianta & LaParo, 2003).

*Rural (inside a CBSA):* town located inside a Core Based Statistical Area (CBSA) with high median income levels, but with lower rates of college attendance and managerial/professional occupations among adults (National Center for Educational Statistics, 2005; Ohio Department of Education, 2006).

*Screening:* method of identifying children who need further assessment to determine their eligibility for special programs or for extra assistance.

*Suburban (Urban Fringe of a Large City):* a district that surrounds a major urban center and is identified by very high-income levels and almost no poverty. A higher rate of college degrees and professional occupations exists among the adult population (National Center for Educational Statistics, 2005; Ohio Department of Education, 2006).
**Urban (Mid-size Central City):** a mid-size city with a population of less than 250,000 categorized by high population density and low median income levels with high poverty rates (National Center for Educational Statistics, 2005; Ohio Department of Education, 2006).

**Delimitations**

Delimitations of this study must be described to analyze the effects on the results. The researcher chose to focus on Northwest Ohio as the geographical location to conduct the study. Thus the results cannot be generalizable outside of this area. Additionally, limits were set by the criteria for the study. Due to the nature of the research, schools were identified as participants of the DIAL-3; schools using other assessment instruments were not considered for the study. Furthermore, the research design of the study, correlational, was intended to show the strength of a relationship. Caution should be employed when reviewing the data to ensure that cause and effect is not assumed.

**Limitations**

Due to the ability of a school system to deny access to the records, the researcher may find it difficult to be truly random in selection of the school district. In addition, the scores will be quantitative; thus any personal situation of the participant, that may have caused skewed scores, will not be known.

Awareness of the delimitations and limitations will provide opportunities to analyze the data according to the intended purpose. Any significant limitations will be discussed in the findings.

**Assumptions**

For the results to be representative of the population, assumptions must be made. The first assumption is that both tests were administered professionally and scored according to the
proper procedures. Both tests are assumed to be sensitive to diverse cultures, race, and gender and are free from bias. Thirdly, the assumption that the DIAL-3 test is reliable and valid in measuring developmental readiness must be assumed. A final assumption that needs to be made is that the Ohio Fourth Grade Achievement Test has validity and reliability in measuring academic skill.

Organization of Remaining Chapters

The remaining study will be divided into four chapters. Chapter II will delve into the research and synthesize the literature. The methodology section, Chapter III, will describe the research methods for the study. Chapter IV will discuss the findings and results of the data collected. In conclusion, the researcher will propose future research opportunities and implications for education.
CHAPTER II. REVIEW OF THE LITERATURE

The literature review for this study is related to the predictive validity of kindergarten assessments and specifically explores kindergarten readiness assessment, current laws and policy, indicators for readiness, and relationship and predictability of the assessment scores.

Kindergarten readiness is a contemporary concept in today’s public schools. The process of placing students into kindergarten has become more complex in the past few years. Historically, automatic entrance into kindergarten was granted to children who were five years old by a specified date. In recent years, growing concern over developmental readiness and lack of academic achievement has sparked interest in early childhood education. In 1990, President Bush and the governors of the United States established six National Education Goals that focused on improving early childhood education. “All children in America will start school ready to learn” (National Educational Goals Panel, 1991), is the first education goal and is the driving force behind the renewed commitment to early childhood education.

Kindergarten Readiness Assessment

Defining readiness is important because policies and programs related to early education are shaped by the perceptions of the ways in which children develop (Rimm-Kaufman & Pianta, 1999; Shepard, 1997). Generally, there are four accepted views on readiness that the literature discusses: The Idealist/Nativist, the Empiricist/Environmentalist, the Social Constructivist, and the Interactionist (Mehaffie & McCall, 2002; Meisels, 1998). Although researchers define the term readiness differently, the definitions can be conceptualized in the above categories. According to Pianta and LaParo (2003), children are ready for school when:

For a period of several years, they have been exposed to consistent, stable adults who are emotionally invested in them; to a physical environment that is safe and predictable; to
regular routines and rhythms of activity; to competent peers; and to materials that stimulate their exploration and enjoyment of the world and from which they derive a sense of mastery. (p. 25)

This definition encompasses an ideal. Hence, is considered an idealist philosophy in abstract terms (Meisels, 1998). Unfortunately, not all American children are exposed to stimulating and safe environments (Maxwell & Clifford, 2004). According to the National Center for Education Statistics (2005), the early education population consists of approximately 11.6 million students from pre-kindergarten through second grade. Socioeconomic, ethnic and cultural differences are often ignored as important factors in the determination of readiness (Duncan & Magnuson, 2005; McAllister, Wilson, Green, & Baldwin, 2005; Meisels, 1996).

In addition to the previous definition, the literature suggests other views on readiness that fall into the idealist category and are equally accepted. For instance, Meisels (1998) suggests that children who reach a certain level of maturity that enables them to sit quietly, focus on the work, engage with their peers in socially acceptable ways, and accept direction from adults are ready to start school. This type of philosophy conceptualizes readiness development as an internal advancement (Kohlberg & Mayer, 1972). Kohlberg and Mayer further suggest that children naturally advance despite the environment in which they are participants. A summary of an idealist perspective, according to Meisels, posits “that children are ready to learn when they are ready” (p. 9).

In contrast to the idealist perspective is the empiricist or environmental view on child readiness. The concept here is that external surroundings drive development (Shepard & Smith, 1988). According to Meisels (1998), the empiricist view of readiness corresponds with knowing; colors, address, shapes, alphabet recitation, the ability to spell one’s name, count to ten, and to
behave in a polite and socially accepted manner. The focus is on what the child can do at this point.

The social constructivist perspective defines readiness in regards to the boundaries of the setting. Researchers suggest that readiness is dependent upon the community in which the child is a member (Jackson May, 2006; McAlister et al., 2005; Meisels, 1998). Life experiences directly impact a child’s development, argues the School Readiness Solutions Group (2005). In support of this view, Former Governor of Kentucky, Paul Patton, states “The education of America’s children begins the day they are born, not their first day in the classroom” (cited in NGA Task Force, 2005, p. 11). Furthermore, this view relates readiness in social and cultural terms; not in terms of something within the child, but something in which families, schools, and communities play a central role (NGA Task Force; Duncan & Magnuson, 2005; Murphy, 2003; Meisels; Love, 2002).

One final perspective in the pursuit to identify readiness is the interactionist view. This comprehensive view focuses on the child and the environment (Pianta & LaParo, 2003; Meisels, 1998; Kagan, 1994). Meisels posits that a child’s readiness can be seen as both contributions to school and the school’s contribution to the child. In support of this perspective, Kagan contributes that this view focuses on helping all children become learners. An assumption purported by Meisels is that an interactionist view falls on a continuum of development. Meisels continues that a “one size fits all” (p. 12) approach is in contrast to this perspective.

To enhance the efforts of the education department in determining readiness, many publishing companies purport to have developed valid and reliable screening instruments. With the onslaught of a variety of these instruments (Ellwein, Walsh, Eads, & Miller, 1991), research
is needed to determine which is the most beneficial for a particular school district (Costenbader, Rohrer, & DiFonzo, 2000; Gredler, 1997).

Due to dramatic changes in the way education views early childhood, many articles have been written on kindergarten readiness. However, many of these articles summarize the similar studies. Limitations of the studies require researchers to search for meaning and relationships between the variables. An example is with the study conducted by Augustyniak, Calabrese, and Cook-Cottone (2004). Their study collected data on White, middle-class, Northeastern Americans. Additionally, while researching kindergarten readiness instruments, Ellwein, Walsh, Eads, and Miller, (1991) found that studies are disproportionately conducted with the majority of participants being non minority.

Assessing kindergarten readiness is one way to determine special needs of individual students. In its purest form, these instruments guide classroom and individual kindergarten curriculum programming (Mehaffe & McCall, 2002; Shepard, 1997). Well intentioned interventions, however, are often inequitable, ineffective, and wasteful of resources (NAECS, 2002). As school systems attempt to alleviate the problem of inequality on the assessment instrument, the need for further research is required.

The main purpose of the assessment needs to be identified and practiced. According to the researchers Mehaffe and McCall (2002), and Shepard and Smith (1988), readiness tests provide information about the child’s development and knowledge at a particular time and therefore should be used for current instructional guidance. Furthermore, these researchers propose that a good readiness test may reflect a child’s ability for kindergarten, but not beyond. Therefore, the selection of the instrument to test readiness should be adequately standardized, reliable, and valid (Duncan & Rafter, 2005). Yet many school systems try to validate their use of
an instrument as a predictor for academic achievement without adequate proof of predictability (Mehaffe & McCall). In studies that are conducted to show relationships between the assessment screening instrument and future academic performance are especially important (Duncan & Rafter, 2005).

Currently, school districts have placed a high priority on locating more appropriate testing instruments for the use in kindergarten readiness assessment (Murphey, 2003). In fact, seven to eight million pre-k to second grade students are screened annually (Education Market Research, 2000). In the summer of 2000, a list was published by Education Market Research (EMR) of the top commercial screening instruments. Leading the list was the Brigance Screens at 23.2% of the respondents stating that these tests were preferred. Following was the Child Development Inventories at 16.3%, the DIAL-R at 13.2%, and High/Scope at 12.1%. Districts stating the use of “other” instruments were at 28.6% (EMR, 2000). The instruments preferred by the twenty-eight percent noting “other” included the Daberon Screening for School Readiness (Ellwein, Walsh, Eads, & Miller, 1991), the Peabody Picture Vocabulary Test (PPVT-R), and the Early Childhood Longitudinal Study (ECLS-K) (Rock & Stenner, 2005).

Current Laws and Policy

Understanding and assessing children’s readiness for school is an essential part in the pursuit of emerging into an effective learning community (Pianta & LaParo, 2003). Focusing on the quality of the school and classroom setting as well as teaching practices enables a school system to make decisions about policy and the curriculum (Pianta & LaParo; Rimm-Kaufman & Pianta, 1999). Annual monitoring of programs and policy can encourage the movement in the right direction (Maxwell & Clifford, 2004). Additionally, this type of critique can increase informed decision making abilities to ensure that programs, policy and investments are
appropriate (Costenbader, Rohrer, & DiFonzo, 2000; Jacobson, 2005). Unfortunately, Pianta
and LaParo argue, there is currently no state or local policy that connects education to the
instructional or social experiences of young children in the classroom.

Currently there are initiative groups that have purported to be advocates for early
childhood learning. Among those groups are 17 states that have reached a consensus to form
partnerships in the project to renew and research readiness assessment and development in
regards to policy formation (Jacobson, 2005). In addition, Jacobson has identified five national
organizations that provide guidance in the project to track measurements that contribute to the
success of individuals in school. The list of organizations includes the National Governors
Association, the National Conference of State Legislatures, the Council of Chief State School
Officers, the Education Commission of the States, and the National Association for the
Education of Young Children (Jacobson).

Despite the existence of these organizations and the emphasis on policy initiatives to
forestall misuses, testing is still predominantly under local rule (Shepard, 1997). Another
phenomenon witnessed in regards to local control is the use of assessment instruments as
interchangeable tools for all purposes (Maxwell & Clifford, 2004; Shepard, 1997; Meisels,
1998). In a study conducted by Shepard, Taylor, and Kagan (1996), participants of readiness
assessment commented that there were state initiatives to discourage negative practices.
However, school districts currently are using these instruments for negative purposes; for
example, denial of kindergarten entry, extra-year long placements in junior kindergartens,
kindergarten retention, and using test results to track students into high and low ability groups
(Maxwell & Clifford; Costenbader, Rohrer, & Di Fonzo, 2000; Ellwein, Walsh, Eads, & Miller,
1991; Mehaffie & McCall, 2002; NAEYC, 2000; Shepard; Meisels; Agostin & Bain, 1997).
An additional issue when developing policy is the consideration of the achievement gap between differing demographics (Davison, Seo, Davenport, Butterbaugh, & Davison, 2004; Duncan & Magnuson, 2005; Rock & Stenner, 2005). According to Duncan and Magnuson, considerable gaps exist between white, black and Hispanic students in regards to school readiness. Furthermore, socio-economic status plays an important role in child readiness (Davison et al., 2004). In a study conducted by Davison et al., children from a lower-income family had less rich vocabulary than their middle to upper income counterparts. In addition, language and vocabulary were increased at different rates causing learning environments to be drastically different (Davison et al., 2004; Duncan & Magnuson, 2005; Rock & Stenner, 2005). Policy makers from the three district types, urban, rural, and suburban, need to be aware of characteristics of the tests (Rock & Stenner). Rock and Stenner posit that construct bias and prediction bias might arise if a school district uses an inappropriate readiness instrument (2005). Careful consideration needs to be employed to ensure that an achievement gap is not induced (Davison et al.; Duncan & Magnuson; Rock & Stenner).

Indicators for Readiness

Central to the national priority to combat illiteracy, the No Child Left Behind Act (NCLB) sets high standards for all American children. Irrespective of children’s background, being proficient readers by the end of third grade is the goal (Bishop, 2003). Bishop argues that determining disabilities at an early age can help in the prevention of illiteracy. Identifying students with possible reading disabilities at an early stage, enables the district to guide intervention programs on an individual level (Bishop; Maxwell & Clifford, 2004; Murphey, 2003; Shepard, 1997). Foorman, Francis, Shaywitz, Shaywitz, and Fletcher (as cited in Bishop, 2003), report that 82% of children who are provided with remedial intervention in the early
grades can become successful readers; compared to only 46% of students who receive remedial intervention in grades three through five. Overall, early intervention is optimal in the fight against illiteracy (Bishop).

Determining indicators of readiness requires advocates and educators to focus on the purpose of readiness assessment (Jacobson, 2005). When determining placement into a kindergarten program, typically two factors are addressed: age and developmental readiness (Augustiniak & Cook-Cottone, 2004). Identifying components that determine developmental readiness is not an easy task. According to The American Academy of Pediatrics (2005), there are no absolute indicators of kindergarten readiness. This organization identifies nine indicators to consider when assessing readiness.

1. The child is in good physical health; the child can see and hear well.
2. The child is independent in self-care skills.
3. The child can follow directions and has begun to develop an attention span.
4. The child speaks clearly and demonstrates age-appropriate language skills.
5. The child knows and can recite their full name as well as the names of their parents.
6. The child is able to work independently for short periods of time.
7. The child can play in small groups with other children.
8. The child tolerates frustration and failure.
9. The child accepts adult supervision and help and easily makes changes when asked to do so.

The list above can be narrowed or expanded for focus in regards to policy and testing. Generally, screening consists of three categories: motor, concepts, and language skills. Assessment instruments purport to measure these categories. Determining which assessment
instrument best benefits the students in a particular district helps administrators utilize the instrument in ethical and intended ways. In order for the indicators to be of value to a specific district, an instrument needs to show predictive qualities to be effective (Ellwein, Walsh, Eads, & Miller, 1991; Pianta & LaParo, 2003).

Along with categories that are frequently found on assessment instruments, readiness domains have been identified as important factors in determining readiness. The National Education Goals Panel (1992) identified four domains that early childhood professionals agree are important indices of readiness. The list includes, social and emotional development, approaches to learning, communication, and cognitive development (Augustiniak & Cook-Cottone, 2004; Kurdek & Sinclair, 2001; Murphey, 2003). Augustiniak and Cook-Cottone (2004) conducted a research study identifying similar domains that incorporated agreed upon indicators and their academic skill and importance.

The focus of the study was to determine predictive validity of the Phelps Kindergarten Readiness Scale. The PKRS uses domain-specific criteria to determine readiness. Domain-specific scores are a critical step in the process of screening (Augustiniak & Cook-Cottone, 2004; Murphey, 2003). Researchers believe that these scores are more predictive of academic achievement (Kurdek & Sinclair, 2001). Following are the readiness skills and the corresponding domain: (Phelps, 1997).

- Reading linked to Verbal Processing- The Verbal Processing domain assesses the child’s ability to make meaning out of vocabulary and to identify and comprehend verbal relationships. The research indicates that these scores are most effective at predicting academic achievement in the later years.
• Math and Reading linked to Perceptual Processing- This domain assesses the child’s ability to visually compare shapes and reproduce designs of increasing complexity.

• Reading and Spelling linked to Auditory Processing- The Auditory Processing domain assesses the ability to differentiate between sounds and to remember auditorily presented material.

• An interaction of these domains facilitates more complex readiness skills.

Participants in the study were 148 children in the state of New York. Eighty-six children were male, and 62 were female. Two simultaneously calculated regression analyses supported the notion that language arts skills were best predicted by the verbal-auditory domain and that all three domains complexly affected math achievement.

The data from this study need to be analyzed within the context of the limitations. The participants were primarily white, middle-class, and from one area in New York. The sample size was small in comparison to the population. Although moderate significance was found, the contributions each domain had were relatively small. A factor analysis to further define domain specificity is needed.

Another study conducted to validate measures for predictive analysis was authored by Anne Bishop (2003). This researcher attempted to identify a combination of predictive measures that correlate with reading achievement, and examined the predictive accuracy of these measures. The identified measures included letter identification, phonological awareness, phonological memory, and rapid automatized naming. In this study 103 children participated, half of the participants were male, 57% were White, and 39% were African American. Socio-economically, the students were diverse; where 79% of students in the urban districts received free and reduced lunch.
A chi-square test was examined by the researcher for the predictive accuracy of the identified measures/indicators. A correlational design was used to show the strength and relationship of the data. A significant correlation was determined to exist between kindergarten readiness and first grade achievement in regards to letter identification, phonological awareness and memory, and automatized naming.

The limitations of this study include a small sample size, a significant correlation only to first grade, and ethnic diversity was limited. However, for practical purposes, the results provide administrators data to guide instruction and intervention to prevent reading failure (Bishop, 2003; Costenbader, Rohrer, & Di Fonzo, 2000).

Linking indicators to assessment instruments, then to future academic achievement is a critical step in the process for validating the use of assessment measures (Ellwein, Walsh, Eads, & Miller, 1991; Pianta & LaParo, 2003). The two studies discussed in regards to indicators should be reviewed and analyzed for implications for future policy.

Relationship and Predictability

According to Meisels (1998) and other researchers (Augustiniak & Cook-Cottone, 2004; Bishop, 2003; Costenbader, Rohrer, & Di Fonzo, 2000; Ellwein, Walsh, Eads, & Miller, 1991; Pianta & LaParo, 2003), many different types of assessments and purposes exist. Meisels posits that to identify one instrument to satisfy all our educational needs is futile. Using assessments carefully and appropriately facilitate resolutions to educational problems; thus leading to proper identification and variations of interventions (Meisels).

Finding links to academic achievement is a goal of most educational systems. Higher expectations for academic skills at earlier stages of childhood require administrators to make decisions about retention and special needs that are not necessarily appropriate (Agostin & Bain,
1997). In order to avoid educational dilemmas, screening measures and instruments need to be critiqued (Costenbader, Rohrer, & DiFonzo, 2000). Relationship to academic achievement needs to be established or the screening instrument has little purpose (Pianta & LaParo, 2003). The link may be the ability to identify children who are at risk for school failure, or it may provide the educational system an opportunity to create and develop appropriate curriculum and programs (Meisels, 1998; Shepard, 1997).

Many studies have focused on the predictive nature of readiness as it relates to academic achievement; however, an area that warrants research is the social aspect of readiness (Agostin & Bain, 1997). In a study conducted by Agostin and Bain, predicting early school success with developmental and social skills screening instruments was the focus. This study also examined problem behavior and included this as a sub-domain. The goal was to determine if any of the sub-domains, developmental, social or behavioral, affected academic achievement, school success, retention and/or grade promotion.

Participants of the study consisted of 184 students. The sample demographics consisted of 23% white, and 75% African American. The subjects were tested at the end of kindergarten and then again one year later. Using the Social Skills Rating Scale (SSRS), a nationally standardized rating scale that identifies and classifies children’s social and behavioral problems, and the Stanford Achievement Test, the scores were analyzed for positive correlations.

The findings of this study suggest that positive social skills and social emotional factors are important in predicting successful academic achievement (Agostin & Bain, 1997). Furthermore, the researchers purport that a significant relationship does exist in regards to social development and should be part of any screening process.
The Agostin and Bain study presented had several limitations. Due to the nature of the SSRS, it is unclear if receptive language is the primary predictor. It is suggested that social skills may have taken on a secondary role for the participating students. The actual reasons why subjects were promoted or retained are not known, thus possibly altering the significance. Additionally, the demographics were not representative of the entire population and therefore may not be generalizable. In all instances, careful study and comparisons among instruments should be comprehensive (Agostin & Bain, 1997).

In an additional study conducted by Kurdek and Sinclair in 2001, predicting reading and mathematics achievement in fourth grade from kindergarten readiness scores was proposed. This study examined age and gender differences in two domains; verbal skills and visual-motor skills. Each domain was then divided into smaller skills. Scores were collected and analyzed in kindergarten then again after taking the fourth grade achievement test.

The researchers in this study reviewed four areas regarding the use of readiness assessment tests and guided the research to help answer their questions. Their first concern was that the most widely used tests cover the same content yet yield different scores. The second reason for conducting their study was to discover if the link to academic achievement could be made beyond the end of first grade. A third area to review was an attempt to determine if certain skills, such as verbal and visuomotor, were linked to academic achievement in later grades. The fourth question the researchers analyzed was if gender and age affected the predictability of the kindergarten assessment in regards to later academic achievement.

Two hundred and eighty-one students participated in the study, 93% were white and 53% were female. Using the Pearson correlation, the researchers analyzed the results and concluded that the link between the two instruments was .54 with a p value of less than .01. Older, female
children had higher verbal and visuomotor skills than males. With controls for age, the researchers concluded that verbal skills predicted reading achievement and visuomotor accurately predicted achievement in mathematics.

This study had several limitations that need to be addressed. First, the sample size was small and primarily white. Additionally, the majority of the participants were from two-parent, middle-class homes. Thirdly, the subscores had different numbers of items on the assessment, thus leading to the possibility of unreliable scores. Due to these limitations, it may be difficult to generalize for the population.

As indicated in the Kurdek and Sinclair study, a link possibly exists between readiness and future academic achievement. However, no absolute statements about the relationship can be made. “The term readiness connotes a link to the future” (Pianta & LaParo, 2003, p. 26). Therefore, prediction of future problems that can lead to effective intervention to prevent or solve those problems is a critical component of readiness assessment (Costenbader, Rohrer, & DiFonzo, 2000; Meisels, 1998; Shepard, 1997).

In a meta-analysis study conducted by Pianta and LaParo, over 3,000 children were participants in 70 longitudinal studies. The goal of this study was to determine how well assessments predicted children’s social/behavioral and academic/cognitive competence. The researchers studied pre-kindergarten to second grade children. Conducting a large scale analysis enabled the researcher to determine whether readiness assessment could predict future academic functioning.

After statistical analysis, the researchers concluded that only 20% indicated that preschool readiness assessment predicted children’s academic/cognitive performance in school.
In addition, the correlations reported for social readiness predicted only 10% of the variability in social performance (Pianta & LaParo, 2003).

The results from this study suggest that readiness assessment cannot be used as predictors of future academic functioning. The intended purpose of assessment needs to be a priority in policy making and program development (Meisels, 1998). Pianta and LaParo purport that assessments may be used for possible interventions; however, the importance of effective transitions between home and school are key aspects in determining future academic achievement (2003).

Figure 1 demonstrates the decision making process in establishing entry into formalized schooling.

**Figure 1. Decision Making Process Chart**
Impact of Cultural Factors on Readiness

Cultural and environmental factors have a profound effect on student performance and there are many factors that must be considered in addressing school readiness. Research suggests that reading readiness is key to subsequent academic growth and students from socio-economically disadvantaged homes are more likely to enter school less prepared than their white peers (Davidson, Seo, Davenport, Butterbaugh, & Davidson, 2004; Neill, 2003; Truscott & Truscott, 2005). Some of the factors that may affect student performance include parental education, family involvement, and school retention patterns.

According to Duncan and Magnuson (2005), the level of parental education is highly correlated to the success of children on achievement and cognitive tests. In this study, the researchers contend that historical, racial and ethnic inequalities have facilitated disparate socioeconomic circumstances; further implying that the level of education varies significantly by race and ethnicity. In addition, the researchers suggest that gaps in socioeconomic status are linked to the gaps in readiness and achievement scores (Davison et al., 2004; Jackson May, 2006).

In fact, in their study, Duncan and Magnuson (2005) contend that in the population sampled, 35 percent of Hispanic mothers did not graduate from high school, as well as 18 percent of Black mothers. Comparatively, White mothers had a 28 percent four-year college completion rate, whereas only 9 percent of Black and 8 percent of Hispanic mothers had completed a similar program. This study focused on human capital, as defined by Duncan and Magnuson, including parental skills, formal schooling, and the establishment of parental goals. These researchers caution that even though a causal role exists in creating achievement gaps,
simplistically focusing on this relationship disregards all other variables, which may affect readiness and academic achievement.

Similarly, a study conducted by Fantuzzo, McWayne, Perry, and Childs (2004) suggests there are multiple dimensions in early childhood learning, including family involvement, that emerge as the strongest predictors of academic success. The researchers propose that promoting parental involvement helps in the social, emotional, and academic development of young children. For this study, 144 preschool children, enrolled in the Head Start federally funded program, were selected for participation. Of those sample, 96 percent were African-American living in urban areas. Additionally, 90 percent were living below $12,000 annually, with 64 percent of those families earning less than $9,000 annually.

Fantuzzo, McWayne, Perry, and Childs (2004) conducted this correlational study to determine if relationships existed between family involvement and scores on three different readiness instruments. They concluded that many dimensions impact the connection between home and school, yet contend that with higher levels of parental education, home/school communication increased. Historically, minority families start this exchange at an unequal level (Davison, Seo, Davenport, Butterbaugh, & Davison, 2004; Duncan & Magnuson, 2004; Jackson May, 2006; Rock & Stenner, 2005). The findings on home-based support correlate to classroom competencies with ethnic minority, urban, low-income children.

Of particular concern is the academic achievement of Black males. In a comprehensive review of the opportunities of Black men in America Ronald Mincy (2005) notes that Black males persistently maintain the poorest life chances of any population in our culture. This assertion is supported by Nogura (2002) who writes on the experiences of Black males in education who lag significantly behind their white peers on standardized tests as well as overall
grade point average. According to the research of Nogura, Black males are more likely to be labeled as behavior problems, suspended and expelled from school, placed in special needs classrooms and remedial programs, and less likely to be assigned to advanced courses. Other researchers, such as Frey (2005), extended the research base and found that when gender and ethnicity were cross-tabulated, the variance increased significantly. In fact, retention rates for Hispanic males were 23 percent higher than for White females. Additionally, in a study conducted by Roderick (1995, as cited in Frey), African American boys were 52 percent more likely to be retained than any other group. Furthermore, Frey cites a report by the Southern Regional Education Board of 2001, where boys are twice as likely to be retained than girls. The research that focuses on these variables is limited and requires a redefinition of readiness as it relates to academic achievement for subgroup populations.

Cultural variables clearly have an impact on readiness and research is needed to identify areas of disparate outcomes. However, more studies are warranted on the relationship between Black, urban males and the scores on readiness assessments as they relate to academic achievement. It would seem that an optimal area of research and intervention would be at the onset of schooling, specifically identifying the most effective use of readiness data.

In a review of the literature, Frey (2005) identified patterns of academic retention and social promotion that reflect readiness levels of subgroup populations. Focusing on ethnicity as a predictor for retention, patterns emerged that supported the contention that variance among ethnic groups increased in an overall analysis. Specifically, 25 percent of Hispanic, and 30 percent of Black youth were retained. The increased prevalence of delayed kindergarten entry, in affluent areas, has prompted a surge in increased expectations in kindergarten (Frey; Meisels, 1998). Trends aimed at increasing academic rigor will continue to influence and inform the
educational environment. The results include higher teacher expectations for all students; thus creating a homogeneous classroom eliminating diversity of specific groups of children, predominately males, children with late birthdates, and children with lower readiness scores (Frey, 2005). These increased expectations place higher responsibility on the child to perform (National Association of Early Childhood Specialist, 2002).

Summary

Through a variety of studies, researchers have suggested that school readiness assessments have the potential to be powerful tools to be utilized to improve education. Although the issue of readiness is relatively new, the practice of standardized testing is not. Administrators are faced with dilemmas regarding practice, purpose, implementation, and policy of screening and assessment (Augustiniak & Cook-Cottone, 2004; Bishop, 2003; Costenbader, Rohrer, & Di Fonzo, 2000; Ellwein, Walsh, Eads, & Miller, 1991; Meisels, 1998; Pianta & LaParo, 2003). Pre-kindergarten children are raised in dramatically different environments (Duncan & Magnuson, 2005; Maxwell & Clifford, 2004; Meisels, 1996; National Center for Education Statistics, 2005). These heterogeneous backgrounds make it hard to choose an equitable and representative assessment instrument.

The researchers discussed in this section support the notion that in order for assessments to be effective and ethical, educators must use them according to the design in which they were intended. According to Meisels (1998), a key issue in the debate over school readiness and assessment lies with whom the burden falls. Children are expected to be ready for school by the age of five. However, another view holds that the schools should be ready for children regardless of readiness for formalized schooling.
Rethinking readiness as more than the completion of a few skills is critical in the development of an appropriate readiness assessment program. Identifying special needs and implementing appropriate interventions is optimal. However, false labeling is a major concern and should be avoided (Agostin & Bain, 1997; Ellwein, Walsh, Eads, & Miller, 1991). Overall, classification accuracy is desired and expected.

Research is still needed to ensure that the educational system provides young children with needed services and resources. Many school systems justify their inappropriate use of screening instruments (NAECS, 2002). It is in the best interest of a school system to find connections or relationships with screening instruments and academic achievement. If no link can be made, then policy may need to change.

Determining if a relationship exists between kindergarten readiness assessment scores on the DIAL-3 and scores on the Fourth Grade State Achievement Test in math and reading will provide school systems an opportunity to plan and implement appropriate programs and curriculum. The best interest of the student is the optimal goal.
CHAPTER III. METHODOLOGY

This chapter will explain the methods used in the proposed research study. The chapter describes the research design, participants, data collection instruments, variables, materials, procedures used to collect the data, and data analysis procedures.

Design

The design of this study is correlational and was appropriate because it allowed the researcher to examine the relationship between two or more variables to explain or predict the outcome was examined. The key quantitative independent variable was the students’ scores on the kindergarten readiness assessment instrument. The dependent variable, students’ fourth grade academic achievement scores in reading and math as measured on the Ohio Fourth Grade Achievement Test, was also quantitative. The researcher compared data from urban, suburban, and rural school districts in regards to obtained scores on both the kindergarten readiness assessment instrument and the fourth grade achievement test.

Participants

Historical data from approximately 50 fifth grade students from each of the district types (rural, suburban, and urban) constituted the sample for this study. School systems who participated in the DIAL-3 and the Ohio Fourth Grade Achievement Test were stratified by district type. The researcher used a random numbers table to randomly select one district from each stratum. Utilizing a sampling method of a stratified-cluster, the researcher randomly selected a total of 208 students for inclusion in this study. This random sampling method provides an opportunity for the researcher to divide the population into three subgroups; with a goal of approximately 50 students from each district type.
The participants in the study were both males and females currently enrolled in an Ohio fifth grade public educational program and who participated in both the DIAL-3 assessment prior to kindergarten and the Ohio Fourth Grade Achievement Test. The targeted population was diverse in socio-economic status, race, and gender and consisted of 208 fifth grade students in Northern Ohio.

Instrumentation

This study used historical data collected from two types of instrumentation. The first instrument was the Developmental Indicators for Assessment of Learning (DIAL-3) (AGS Publishing, 2005). The second instrument was the Ohio Fourth Grade Achievement Test in Math and Reading (Ohio Department of Education, 2005). Students who had completed the DIAL-3 prior to entering the kindergarten year and subsequently took the Ohio Achievement Test in the fourth grade year were the participants for this study.

*DIAL-3*

The DIAL-3 (Mardell-Czudnowski & Goldenberg, 1998) is a screening instrument designed to identify young children’s developmental needs. Guiding effective services for the benefit of young children is the overall purpose of the DIAL-3. This instrument assesses children ages three years (3.0) to six years eleven months (6.11). The assessment is designed to be administered to different age groups. This study focuses on the age group four years six months (4.6) to five years eleven months (5.11). The assessment takes approximately one hour per child which includes time for registration, warm-up, area screening, parent questionnaire, vision and hearing screening, and parent conferences. The area screening consists of three categories; motor, concepts, and language (Mardell-Czudnowski & Goldenberg, 1998). The motor category includes gross and fine motor skills. Catching, jumping, hopping, and skipping
are included in the gross motor assessment. Additionally, building with blocks, cutting, copying shapes and letters, writing, and a finger touching task is incorporated into the fine motor category. Another category, language, includes verbal communication to assess expressive, receptive skills. A third category, concepts, includes naming and identifying body parts, and colors, counting blocks, sorting shapes, identifying concepts in a triad of pictures, and a unique assessment tool of automatic naming of colors (AGS Publishing, 2005).

The DIAL-3 used Cronbach’s coefficient alpha to determine reliability. The mean reliability on the screening assessment was 0.87 (AGS Publishing, 2005). This score is based on the sum of scaled scores for the motor, concepts, and language portion. Children ages 5.0 to 5.5 had more reliable scores than the other age categories; this due to the fact that the older children, 6.6 to 6.11, obtain near perfect scores.

The children used in the reliability study were both male (54%) and female (46%). However, diversity of race and ethnicity was low in contrast to White representation (91%). African American representation was 6.3%, and Hispanic participation was 1.9%. Additionally, children studied came from predominately educated homes where 63% of the parents had some education at the college level.

One thousand five hundred and sixty children participated in the validity study; with a mean of 101.3 and a standard deviation of 14.9 (AGS Publishing, 2005). The normative scores of the DIAL-3 were presented in percentile form. For each child the percentile scores were then converted to standard scores. Intercorrelation between the scores on the motor, concepts, and language portion are 0.41, 0.50, and 0.65.
The Ohio Fourth Grade Achievement Test

The Ohio Fourth Grade Achievement Test was developed by the Ohio Department of Education and consists of field tested items. Evidence of content validity consists of item analysis and evaluation of sensitivity, free of bias and checked for fairness. Committees were convened to establish this validity. Active teachers, curriculum representatives, administrators, higher education personnel, and parents were members of the committees. The Ohio Department of Education regulates the process.

The Ohio Fourth Grade Achievement Test is given in the spring of the child’s fourth grade year. Teachers administer the test according to the procedures designed by the testing company. Two educational professionals are assigned to each test setting. For example, the regular classroom teacher and the school psychologist or reading specialist may be paired to proctor the test.

The reliability coefficient alpha on the Ohio Fourth Grade Achievement Test is 0.88 for reading and 0.77 for math (ODE, 2005). Approximately 132,000 fourth grade students participated in the test in the spring of 2005. A scaled score standard deviation for reading of 30.05 and 30.06 for math was calculated. SEM (standard error of means) was calculated at 10.3 and 14.42 for reading and math.

Procedures

Prior to collecting any data, the researcher gained the Bowling Green State University Human Subjects Research Board (HSRB) approval for the study. To proceed with this correlational study, contact with the publishing company was necessary to identify DIAL-3 participating school districts in Northern Ohio. However, confidentiality laws prohibited the publishing company to divulge any information, prompting the researcher to contact individual
school districts. Unfortunately, several districts were not interested in participating. Therefore, the researcher personally contacted curriculum directors to encourage participation. Three districts that met the criteria established for the study were selected. The criteria included administration of the DIAL-3 to students prior to kindergarten and the Ohio Fourth Grade Achievement Test. Once the districts were identified in each district type, urban, suburban, and rural, the researcher identified the number of elementary schools per district, then randomly selected on school to participate.

A formal letter describing the purpose and procedure of the study was presented to the assistant superintendent in one district and the curriculum directors of the other two selected school districts. Further communication was necessary to fully describe the study. Due to the nature of confidentiality laws in regards to public school records, the researcher discussed ethical practice with each participating district, and obtained district permission for the study. This correlational study required the researcher to work with each school district to develop a code to identify participants. Each district representative coded each student’s name for confidentiality purposes, the researcher did not have access to the names of students. An example of the coding procedure is presented in the Figure 2. To encourage participation, the researcher committed to provide the data results of the study to the school district.

*Figure 2. Coding Grid*

<table>
<thead>
<tr>
<th>Code</th>
<th>Student’s Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>John Smith</td>
</tr>
<tr>
<td>B</td>
<td>Jane Smith</td>
</tr>
</tbody>
</table>

After the appropriate permissions was granted, the researcher communicated via phone with individual school personnel, to discuss the data coding process and anticipated time line. Student scores were retrieved and recorded. Gender, race, and socio-economic status was also
recorded by the school counselor. The researcher planned to provide summary information regarding the study to the participating individual school districts, the publishing company of the DIAL-3, and the Ohio Department of Education when the study was complete. In an additional conversation, the researcher also volunteered the study results to the author of the DIAL-3. The intention of the researcher was to provide information that will benefit the child, parent, school district, testing companies, and the education program in the state of Ohio.

Research Questions

Research Question 1: Is there a significant correlation between pre-kindergarten student test scores on the Developmental Indicators for Assessment of Learning (DIAL-3) instrument and test scores for the same students four years later on the mathematics and reading sections of the Ohio Fourth Grade State Achievement Test?

Research Question 2: Does a partial correlation exists between a student’s age at the time the DIAL-3 instrument is completed and the predictability of success on the Ohio Fourth Grade State Achievement Test?

Research Question 3: Is there a significant correlation between pre-kindergarten student test scores on the Developmental Indicators for Assessment of Learning (DIAL-3) instrument and test scores for the same students four years later on the mathematics and reading sections of the Ohio Fourth Grade State Achievement Test by (3a) type of district (urban, rural, or suburban), (3b) gender, and (3c) ethnicity?

Data Analysis

The statistical methods to analyze the results of this study varied. The researcher, familiar with the developmental screening process, ensured that the interpretation of the scores resulted in careful, respectful appreciation, as well as maintaining the integrity of the process.
Screening the data for extreme scores that may cause skewed distribution was a responsibility of the researcher. The researcher used descriptive statistics to analyze the collected data. Measures of central tendency and variability of the scores on each assessment test was interpreted. A frequency polygon to represent the distribution of scores was also completed. To show a mutual or linear relationship between the independent variable and the dependent variable, the researcher used a scatterplot. The data were analyzed for each district type using the same methods.

A Pearson Correlation Coefficient for the DIAL-3 score and OAT scores in reading and math were calculated for the total, the three district types, gender, and ethnicity. Using this inferential technique provided the researcher an opportunity to describe how accurately one variable predicts the other, whether positive or negatively influenced. The Pearson Correlation Coefficient was utilized to measure the degree of the relationship between student scores on the kindergarten readiness assessment and on the fourth grade academic achievement in math and reading. Data is presented by research question. Student test scores were analyzed by urban, suburban, and rural district type to determine if a predictive relationship existed.
CHAPTER IV. RESULTS

The purpose of this chapter is to present the results of the statistical analysis for this study. This quantitative study was guided by the overarching research question: Is there a correlation between scores on the Developmental Indicators for Assessment of Learning (DIAL-3) instrument and test scores for the same students four years later on the mathematics and reading sections of the Ohio Fourth Grade State Achievement Test? The data collected were organized and analyzed by frequency distribution, descriptive statistics, and correlations using Microsoft Excel and the Statistical Package for the Social Sciences (SPSS). The presentation of this chapter will be organized by research questions, with an initial discussion of the demographic and respondent characteristics.

Demographic Characteristics

The data for this study were collected from three districts in Northwest Ohio using a DIAL-3 score from the year 2001 and an OAT score from spring 2006. Each represented a specific district type as defined by the National Center for Educational Statistics (2005); a mid-size city (urban), an urban fringe of a large city (suburban), and a rural inside a Core Based Statistical Area (rural). Of the 208 participants, 105 (50%) were identified as urban residents, 55 (26%) as suburban, and 48 (23%) as rural. A further analysis identified 94 participants (45%) as male, and 114 (55%) as female. Additionally, 155 (75%) students were characterized as White, and 53 (25%) represented Black, Muti-racial, Hispanic, and Asian ethnicities. All participants ranged in age from 4.9 to 6.0 years of age.

Results by Research Questions

The researcher focused on three research questions for this study; the first representing the primary focus for the study. A partial correlation was considered for the second research
question. Additionally, the third research question, which focused on three variables, was divided and analyzed accordingly. Descriptive statistics and correlation coefficients were utilized for all research questions. Statistical significance at the .01 alpha level was achieved for all variables. A presentation of the results is offered below by research question.

Research Question 1

Is there a significant correlation between pre-kindergarten student test scores on the Developmental Indicators for Assessment of Learning (DIAL-3) instrument and test scores for the same students four years later on the mathematics and reading sections of the Ohio Fourth Grade State Achievement Test?

Means and standard deviations, related to the total sample, were calculated. A tertiary analysis uncovers the average DIAL-3 score to be 67 out of a possible 93 points. Furthermore, in regards to the OAT reading and math scores, only a slight difference is indicated in total scores for the two content areas. Table 1 presents the descriptive statistics for the total sample.

Table 1

<table>
<thead>
<tr>
<th></th>
<th>Mean</th>
<th>Standard Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>DIAL-3 Total</td>
<td>67.62</td>
<td>11.00</td>
</tr>
<tr>
<td>OAT Reading</td>
<td>423.71</td>
<td>25.17</td>
</tr>
<tr>
<td>OAT Reading Performance Level</td>
<td>3.17</td>
<td>.81</td>
</tr>
<tr>
<td>OAT Math</td>
<td>427.38</td>
<td>26.31</td>
</tr>
<tr>
<td>OAT Math Performance Level</td>
<td>3.5</td>
<td>1.05</td>
</tr>
</tbody>
</table>

*Note: Performance level 3= Proficient at the state level*

A Pearson Correlation Coefficient was utilized to calculate the relationship between the two tests for the total sample. The results, shown in Table 2, indicated that a low correlation exists in regards to the variables presented. For instance, the correlation coefficient for the
DIAL-3 and the Ohio Achievement Test in reading was calculated at .38. The DIAL-3 and the achievement math score produced a slight increase in correlation compared to the reading (OAT Math = .42), however is relatively weak in regards to predictability. Although the scores presented are statistically significant (p< .001), the predictive ability of these results has almost no value.

In educational research, a correlation coefficient between .40 and .60 are often proven to have theoretical as well as practical value (Frankel & Wallen, 2006; Kubiszyn & Borich, 1996). For the purpose of this study the researcher will identify practical significance using this value (greater than .40) and will apply an alpha level of .01 for statistical significance.

Table 2

<table>
<thead>
<tr>
<th></th>
<th>DIAL-3 Total</th>
<th>DIAL-3 Age</th>
</tr>
</thead>
<tbody>
<tr>
<td>DIAL-3 Total</td>
<td>1.00</td>
<td>.04</td>
</tr>
<tr>
<td>OAT Reading</td>
<td>.38*</td>
<td>-.06</td>
</tr>
<tr>
<td>OAT Reading Performance Level</td>
<td>.37*</td>
<td>-.03</td>
</tr>
<tr>
<td>OAT Math</td>
<td>.42*</td>
<td>-.07</td>
</tr>
<tr>
<td>OAT Math Performance Level</td>
<td>.37*</td>
<td>-.06</td>
</tr>
</tbody>
</table>

* indicates p< .01

Research Question 2

Does a partial correlation exist between a student’s age at the time the DIAL-3 instrument is completed and the predictability of success on the Ohio Fourth Grade State Achievement Test?

The researcher conducted a partial correlation using the DIAL-3 and the OAT score in Reading and Math, controlling for age, and discovered no relationship to the scores on the instruments, the DIAL-3 (r = .04), OAT Reading (r = -.06), or the math portion of the OAT (r = -.07). Further analysis was deemed necessary since the covariate was insignificant (Table 2).
Research Question 3a: Total Sample by District Type

Is there a significant correlation between pre-kindergarten student test scores on the Developmental Indicators for Assessment of Learning (DIAL-3) instrument and test scores for the same students four years later on the mathematics and reading sections of the Ohio Fourth Grade State Achievement Test by type of district (urban, rural, or suburban)?

Means and standard deviations were calculated for the two measures by district type (see table 3). A review of mean scores by district type indicates that the suburban participants ($M = 81.42$) had a higher average DIAL-3 score compared to the urban ($M = 60.98$) and rural districts ($M = 66.31$). However, the rural district surpassed the average OAT scores slightly in comparison with the other district types; thus, raising the performance level for the rural district.

Table 3

<table>
<thead>
<tr>
<th>Total Sample by District Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>Urban N=105</td>
</tr>
<tr>
<td>DIAL-3 Total</td>
</tr>
<tr>
<td>OAT Reading</td>
</tr>
<tr>
<td>OAT Reading Performance Level</td>
</tr>
<tr>
<td>OAT Math</td>
</tr>
<tr>
<td>OAT Math Performance Level</td>
</tr>
</tbody>
</table>

To determine if correlation coefficients between students’ scores on the DIAL-3 and OAT, differed by district types, the researcher conducted a Pearson Correlation Coefficient analysis (see Table 4). Upon examination, the data indicates that there is a moderate relationship between the scores in the urban district on the DIAL-3 and the OAT. Additionally, suburban OAT Math coefficients suggests a moderate correlation ($r = .45$) between the DIAL-3 and math
achievement. Urban participants show a higher correlation in reading scores than suburban participants; conversely, suburban participants have a higher correlation coefficient in math than do the urban counterparts. Further examination, however, underscores the lack of predictability in the rural district with correlation coefficients ranging from -.01 to .16. Although a desired correlation of .6 was not met in either the urban or suburban districts, the .49 (OAT Reading) in the urban district and the .45 (OAT Math) in the suburban district suggest correlational patterns that may provide a reasonable prediction.

Table 4

*Correlation Coefficient (r) of DIAL-3 by District Type*

<table>
<thead>
<tr>
<th></th>
<th>Urban N=105</th>
<th>Suburban N=55</th>
<th>Rural N=48</th>
</tr>
</thead>
<tbody>
<tr>
<td>OAT Reading</td>
<td>.49*</td>
<td>.30*</td>
<td>-.01</td>
</tr>
<tr>
<td>OAT Reading Performance Level</td>
<td>.47*</td>
<td>.37*</td>
<td>-.02</td>
</tr>
<tr>
<td>OAT Math</td>
<td>.41*</td>
<td>.45*</td>
<td>.16</td>
</tr>
<tr>
<td>OAT Math Performance Level</td>
<td>.38*</td>
<td>.43*</td>
<td>.11</td>
</tr>
</tbody>
</table>

* indicates \( p < .01 \)

Research Question 3b: Total Sample by Gender

Is there a significant correlation between pre-kindergarten student test scores on the Developmental Indicators for Assessment of Learning (DIAL-3) instrument and test scores for the same students four years later on the mathematics and reading sections of the Ohio Fourth Grade State Achievement Test by gender?

Means and standard deviations were calculated for the DIAL-3 and the OAT in Reading and Math by gender. According to the calculations, male participants scored slightly higher on the OAT Math (\( M = 428.70 \)) than did the female participants (\( M = 426.29 \)). However, the female
participants scored higher on the OAT Reading (424.35) than the males ($M = 422.94$). The results for these computations are presented in Table 5.

Table 5

*Total Sample by Gender*

<table>
<thead>
<tr>
<th></th>
<th>Male N=94</th>
<th>Female N=114</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean</td>
<td>SD</td>
</tr>
<tr>
<td>DIAL-3 Total</td>
<td>67.13</td>
<td>10.71</td>
</tr>
<tr>
<td>OAT Reading</td>
<td>422.94</td>
<td>28.50</td>
</tr>
<tr>
<td>OAT Reading Performance Level</td>
<td>3.11</td>
<td>.93</td>
</tr>
<tr>
<td>OAT Math</td>
<td>428.70</td>
<td>27.61</td>
</tr>
<tr>
<td>OAT Math Performance Level</td>
<td>3.56</td>
<td>1.09</td>
</tr>
</tbody>
</table>

A gender comparison of correlation coefficients of DIAL-3 and OAT scores is presented in Table 6. Results indicate a higher correlation with male students than with female students overall. Applying the criteria for practical significance, $r = .4$ and above, suggests the ability of the DIAL-3 to moderately predict reading and math scores for male participants as indicated by the results ($r = .424$ and .446).

Table 6

*Correlation Coefficient (r) of DIAL-3 Total by Gender*

<table>
<thead>
<tr>
<th></th>
<th>Male N=94</th>
<th>Female N=114</th>
</tr>
</thead>
<tbody>
<tr>
<td>OAT Reading</td>
<td>.424*</td>
<td>.343*</td>
</tr>
<tr>
<td>OAT Reading Performance Level</td>
<td>.402*</td>
<td>.337*</td>
</tr>
<tr>
<td>OAT Math</td>
<td>.446*</td>
<td>.404*</td>
</tr>
<tr>
<td>OAT Math Performance Level</td>
<td>.427*</td>
<td>.322*</td>
</tr>
</tbody>
</table>

* indicates p< .01
Research Question 3c: Total Sample by Ethnicity

Is there a significant correlation between pre-kindergarten student test scores on the Developmental Indicators for Assessment of Learning (DIAL-3) instrument and test scores for the same students four years later on the mathematics and reading sections of the Ohio Fourth Grade State Achievement Test by ethnicity?

The researcher conducted a descriptive analysis of participants, grouped by ethnicity. Although the mean and standard deviations were relatively consistent across ethnic groups, the researcher made note of the variance in sample size. The calculations are presented below:

Table 7

<table>
<thead>
<tr>
<th></th>
<th>White N=155</th>
<th>Black N=30</th>
<th>Multi-race N=17</th>
<th>Other N=6</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean</td>
<td>SD</td>
<td>Mean</td>
<td>SD</td>
</tr>
<tr>
<td>DIAL-3 Total</td>
<td>69.55</td>
<td>10.88</td>
<td>60.10</td>
<td>8.63</td>
</tr>
<tr>
<td>OAT Reading</td>
<td>428.33</td>
<td>23.84</td>
<td>409.07</td>
<td>22.30</td>
</tr>
<tr>
<td>OAT Reading Performance Level</td>
<td>3.30</td>
<td>.75</td>
<td>2.73</td>
<td>.83</td>
</tr>
<tr>
<td>OAT Math</td>
<td>432.12</td>
<td>24.44</td>
<td>408.67</td>
<td>28.64</td>
</tr>
<tr>
<td>OAT Math Performance Level</td>
<td>3.67</td>
<td>1.01</td>
<td>2.8</td>
<td>1.13</td>
</tr>
</tbody>
</table>

The researcher examined the differences between ethnic groups in regards to correlation coefficient for the two measures. Most notable was the significance with the minority population (Table 8). According to Frankel and Wallen (2006), a correlation coefficient of 0.5 provides the ability to make crude predictions about an individual. Additionally, a coefficient of .65 or higher enables the researcher to make reasonable predictions that are accurately purposeful. In so doing it is notable that the variable of ethnicity in regards to DIAL-3 and the OAT Reading, all three
minority groups have a correlation coefficient of at least 0.5, with the Multi-racial participants generating a coefficient of .67. In contrast, the White participants generated a correlation coefficient of only .245 in reading and .309 in math. The results also indicate a moderate correlation, although lower than in reading, in the category of DIAL-3 scores and OAT Math scores among Black (r = .431), Multi-racial (r = .476), and Other (r = .685) participants.

Table 8

*Correlation Coefficient (r) of DIAL-3 for DIAL-3 Total by Ethnicity*

<table>
<thead>
<tr>
<th></th>
<th>White N=155</th>
<th>Black N=30</th>
<th>Multi-race N=17</th>
<th>Other N=6</th>
</tr>
</thead>
<tbody>
<tr>
<td>OAT Reading</td>
<td>.245*</td>
<td>.569*</td>
<td>.670*</td>
<td>.509</td>
</tr>
<tr>
<td>OAT Reading Performance</td>
<td>.236*</td>
<td>.559*</td>
<td>.688*</td>
<td>.335</td>
</tr>
<tr>
<td>Level</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>OAT Math</td>
<td>.309*</td>
<td>.431**</td>
<td>.476</td>
<td>.685</td>
</tr>
<tr>
<td>OAT Math Performance</td>
<td>.258*</td>
<td>.353</td>
<td>.506**</td>
<td>.719</td>
</tr>
<tr>
<td>Level</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* indicates p< .01
** indicates p< .05

Additional Analysis

In addition to the analysis of the variables by individual category, an examination using cross tabulation was conducted. Table 9 identifies correlation coefficients by district type and gender. In the urban district, male students have a higher correlation between the DIAL-3 score and the subsequent OAT score in both reading and math than their counterparts in other districts; .518 in the urban district compared to .357 and -.072 in suburban and rural respectively.

Additionally, according to the data set, urban female students also have a higher relationship than females in other district types. The rural data shows absolutely no correlation between kindergarten readiness scores and achievement test scores.
Table 9

**Correlation Coefficient (r) of DIAL-3 by District Type and Gender**

<table>
<thead>
<tr>
<th></th>
<th>Urban</th>
<th>Suburban</th>
<th>Rural</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Male N=45</td>
<td>Female N=60</td>
<td>Male N=24</td>
</tr>
<tr>
<td>OAT Reading</td>
<td>.518</td>
<td>.474</td>
<td>.357</td>
</tr>
<tr>
<td>OAT Reading Performance Level</td>
<td>.468</td>
<td>.482</td>
<td>.466</td>
</tr>
<tr>
<td>OAT Math</td>
<td>.516</td>
<td>.340</td>
<td>.463</td>
</tr>
<tr>
<td>OAT Math Performance Level</td>
<td>.524</td>
<td>.287</td>
<td>.492</td>
</tr>
</tbody>
</table>

A further analysis was conducted to identify correlational patterns by district type and ethnicity. In order to calculate the significance, the researcher disseminated the data by variables for correlation coefficients in regards to the DIAL-3 scores and the OAT in Reading and Math. The Pearson Correlation Coefficient measured .578 for Black youth, .670 for Multi-racial students and .784 for other students of color. All identified as participants in the urban district. Although .784 (other) is considered irrefutable in providing accurate predictions, the low number of participants is noteworthy. Table 10 provides evidence of significance.

Table 10

**Correlation Coefficient (r) of DIAL-3 by District Type and Ethnicity**

<table>
<thead>
<tr>
<th></th>
<th>Urban</th>
<th>Suburban</th>
<th>Rural</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>White N=56</td>
<td>Black N=28</td>
<td>Multi-Racial N=17</td>
</tr>
<tr>
<td>OAT Reading</td>
<td>.398**</td>
<td>.578*</td>
<td>.670*</td>
</tr>
<tr>
<td>OAT Reading Performance Level</td>
<td>.308**</td>
<td>.564*</td>
<td>.688*</td>
</tr>
<tr>
<td>OAT Math</td>
<td>.399*</td>
<td>.423**</td>
<td>.476</td>
</tr>
<tr>
<td>OAT Math Performance Level</td>
<td>.367*</td>
<td>.343</td>
<td>.506**</td>
</tr>
</tbody>
</table>

* indicates p< .01
** indicates p< .05
Further analysis of the data prompted the researcher to continue with the cross tabulation for the last analysis. The final table (Table 11) represents the correlation coefficient examined by gender and ethnicity. Although the sample provides a large majority of White participants, the data provides evidence of the possible significance to predictability of the scores in certain subgroup populations. As indicated by the results, a strong significant correlation is evident between Black male participants in regards to DIAL-3 scores and scores on the OAT in reading ($r = .85$). Another category that suggests a strong correlation is with the Multi-racial female participants on the reading portion of the OAT ($r = .84$). Additionally, the correlation in math is moderately strong with Black males ($r = .58$) and Multi-racial females ($r = .54$). Conversely, as indicated by the results, little to no correlation is evident in regards to White participants of either gender.

Table 11

*Correlation Coefficient (r) of DIAL-3 by Gender and Ethnicity*

<table>
<thead>
<tr>
<th></th>
<th>Male</th>
<th>Female</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>White N=77</td>
<td>Black N=10</td>
</tr>
<tr>
<td>OAT Reading</td>
<td>.31*</td>
<td>.85*</td>
</tr>
<tr>
<td>OAT Reading Performance Level</td>
<td>.27**</td>
<td>.82*</td>
</tr>
<tr>
<td>OAT Math</td>
<td>.35*</td>
<td>.58</td>
</tr>
<tr>
<td>OAT Math Performance Level</td>
<td>.35*</td>
<td>.51</td>
</tr>
</tbody>
</table>

* indicates $p < .01$

** indicates $p < .05$

Summary

The sample population for this study consisted of 208 fourth grade students from Northwest Ohio. Several districts were contacted, however, only three chose to participate. The researcher, along with the district psychologist, school counselor, or the testing coordinator from
each district compiled random selections of student records. All 208 participants attended a half-day kindergarten program in the identified district, no transient students were considered. Additionally, three variables were removed from the data set due to extreme low numbers of participants; including special education recipients, retention candidates, and readiness placement. Although placement in a readiness kindergarten would warrant analysis, two of the three districts did not offer this service in the year 2001, and the third district had too few for significant analysis.

The researcher studied three main research questions, delving deeply into each data set. The independent variable, the students’ scores on the kindergarten readiness assessment instrument (DIAL-3), was examined against the cohort scores on the Ohio Fourth Grade Achievement Test in reading and math (the dependent variable).

Calculations were conducted using the Pearson’s Correlation Coefficient to show relationships between the independent and dependent variables. Utilizing this method for data analysis, degrees of correlation could be determined. The relationship between the DIAL-3 score and the OAT Reading score for Black male participants produced one of the highest correlation coefficient. Additionally, OAT Reading scores for Multi-racial participants generated high correlation coefficients. Furthermore, the same category provided evidence that a moderate relationship between DIAL-3 and OAT Reading also exists with other students of color. Conversely, the data from White students showed an extremely weak relationship.

The independent variables, district type and gender, additionally, showed influence on the relationship between the DIAL-3 and OAT scores in the urban district. Throughout the analysis, the rural district showed the least amount of correlation. Consequently, the researcher determined that no further examination of the rural district was warranted for this study.
Ancillary findings of the study revealed large variances between district type, gender, and ethnicity in regards to correlational patterns. Chapter V will summarize the findings of chapter IV, present interpretations and conclusions, introduce recommendations for future practice and research opportunities.
CHAPTER V. CONCLUSIONS AND RECOMMENDATIONS

This chapter provides an overview of the study as well as a discussion of the research findings in respect to interpretation and probable conclusions. In addition, recommendations for future practice and research opportunities are presented. While the contemporary commitment to student readiness has escalated, limited studies have provided specific data on correlative patterns that link readiness assessment to academic achievement and progress. Therefore, this dissertation study was designed with the intent to contribute to the research base in regards to kindergarten readiness and assessment.

Review of Study

A renewed commitment to early childhood education in recent years has prompted many researchers to explore the concept of assessing readiness. However, the research on predictive qualities of an instrument is limited. Ellewin, Walsh, Eads, and Miller (1991), in addition to Pianta and LaParo (2003), suggest that the value of an assessment instrument to a district depends on the predictability for student academic achievement. Furthermore, a determination on which assessments best benefit students in specific districts, such as, urban, suburban, and rural, is an essential component in program planning.

Currently, school districts have the task of selecting from a vast list of readiness skills assessments (Ellwein, Walsh, Eads, & Miller, 1991). Determining the purpose and criteria for employing an instrument is the responsibility of the district. This district responsibility is due to the fact that no official definition of readiness has been accepted as absolute (Sluja, Scott-Little, & Clifford, 2000). According to Ferrero (2005), combining philosophy and ideology enables educators to make sense of the values, and culture of the community, which provides a compass for shaping decisions. Further suggesting that since schooling is an extension of child rearing,
school districts must consider the environment from which the students are immersed (Ferrero, 2005; Jackson May, 2006; McAlister et al., 2005). Moreover, this creates the need to research various screening instruments that fit the needs of the specific community.

In educational settings, the term data driven decision-making seems to occupy the majority of conversations regarding educational improvement. The practice of analyzing data to guide instruction helps educators become more effective. By using data, educators can focus on instruction and improve the learning environment (Riha-Link, 2004). Thus, the practice of assessing pre-kindergarteners for informed decision-making is noteworthy and warrants research to identify best instruments. In support of the assessment trend, many states require that schools administer some form of a screening instrument (Costenbader, Rohrer, & DiFonzo, 2000). Furthermore, according to the aforementioned researchers, educational professionals are interested in results from the data for the purpose of determining if special needs exist and if accommodations or interventions are needed (2000).

The purpose of this study was to examine the relationship between the scores on the DIAL-3 and scores on the OAT in Reading and Math for the same cohort of students. Specifically, this study explored variables such as gender, ethnicity, and district type to investigate the impact on predictability between the data sets. To address the premise of this study, three research questions were developed and analyzed.

The procedures for analyzing the three research questions utilized descriptive statistics as well as correlation coefficients. The first research question focused on an overall correlation between the total sample ($n = 208$), the scores on the DIAL-3 and the OAT in Reading and Math. A Pearson Correlation Coefficient for the OAT Math, $r = .42$, signifies a weak overall relationship between the scores, yet warrants further examination. Conversely, the correlation
coefficient for the DIAL-3 and the OAT Reading, $r = .38$, has almost no value in regards to predictability.

Representing the second research questions, a partial correlation was conducted controlling for age. The chronological age of the population ranged from 4.9 to 6.2 years of age. For the variables presented, no relationship between age and scores on the two instruments was discovered.

The third research question was divided into three sections. District type was defined using definitions for typology from United States Educational Department as well as from Ohio Department of Education. The specific districts in Northwest Ohio who participated in this study are situated in three different counties and are described demographically below:

1) The urban district has a minority population of 49.3 percent. The median income is $22,000. The average daily membership (ADM) is over 4000 students and encompasses ten square miles. The urban population for this study includes 18.8% of the work force having an administrative or professional occupation. Furthermore, a higher percentage of economically disadvantaged students attend this district.

2) The suburban district has a minority population of 7.9 percent. The median income of the population is $46,000, with 0.5 percent considered poor. The ADM is 4,400 students and encompasses 29 square miles. The percent of professional occupations among the suburban population is 52.5 percent.

3) The participating rural district changed considerably in the past few years; thus, the rural distinction is shifting to suburban characteristics. However, at the start of this study, the USDE identified this district as rural. The rural district used in this study has a minority population of 3.7 percent and a median income of $45,000. Forty-one percent of the
population is considered in professional or administrative occupations. The district encompasses 73 square miles with 3.9 percent identified as agricultural.

Of the 208 participants, the majority is White; however, 50 percent are identified as urban and are lower in economic status than the counterparts. Furthermore, when discussing ethnicity, it is noteworthy that 53 participants (25%) were identified as representing students of color. Continuing with an analysis of research question three, the researcher conducted a series of descriptive statistics as well as Pearson Correlation Coefficient. As the following discussion will elucidate, most notable as significant, is the impact the independent variables, including district type, gender, and ethnicity, have toward predictability.

Discussion of Research Findings

As a result of the findings, a discussion for consideration is presented. The research findings are listed according to practical significance. First, an examination on the correlation between ethnicity and the scores on the two instruments will be discussed, with a detailed exploration viewing ethnicity and gender. Then district type and ethnicity will be examined. A further discussion will include the cross tabulation of gender and district type in regards to correlation between the DIAL-3 and the OAT in Reading and Math. Following will be an investigation of the correlation with district type and the assessments. A final discussion will be presented on gender as it relates to the research question.

Ethnicity

Examining data from ethnic groups in regards to correlations provides an opportunity to explore the possible reasons for the variance. All three minority groups averaged a higher correlation coefficient than did White participants. The correlation between the DIAL-3 and the OAT in reading for Black ($r = .57$) and Multi-race($r = .67$) students provides the researcher with
the ability to make appropriate, and practical predictions. Moreover, these findings indicate that there is more significant school readiness predictability for Black and Multirace students than white students.

According to Duncan and Magnuson (2005), considerable gaps exist between White, Black, and Hispanic students in regards to school readiness (McAlister et al., 2005). Additionally, minority students (with the exception of Asian students) typically score below their White peers on the assessments (Davison et al., 2004). In the data collected for this study, the mean score for Black students on the DIAL-3 is 10 points below that of White students. The disparity continues throughout the students’ educational experience evident with the OAT Reading score of 19 points below and an OAT Math score of more than 24 points below that of their White counterparts.

A further analysis of the correlation between ethnicity and the scores of the DIAL-3 and the OAT in Reading and Math provide insight on the relationship between school readiness and fourth grade achievement as measured on the state test. The research suggests that many differences exist between cultural environments that impact a student’s ability to score well on a readiness assessment (Davison et al., 2004; Duncan and Magnuson, 2005; Rock & Stenner, 2005. The impact of cultural environments paired with the lack of philosophical continuity between early readiness programs poses some challenges in predictive data analysis.

Additionally, Davison, Seo, Davenport, Butterbaugh, and Davison (2005) suggest early childhood programs are diverse and approach the students preparation with differing philosophies of readiness; thus making it extremely difficult to align programs that will prepare students for future achievement. As discussed in the literature review a social constructivist perspective or philosophy describes readiness in the context of environmental settings
(McAlister et al., 2005; Meisels, 1998). According to the School Readiness Solutions Group (2005) and other researchers, life experiences directly affect a child’s development (Jackson May, 2006; McAlister et al.). Therefore, suggesting that the children taking the assessment are so diverse in cultural capital that it is evident that the results between White and minority students will be different and should be analyzed accordingly. Rock and Stenner (2005) suggest that racial and ethnic bias in the test is a major concern and needs to be systematically examined. In an attempt to validate the assessment, it is necessary to focus on construct bias as it relates to the purported measurements.

The results of the data collected suggest that a significant correlation between the DIAL-3 scores and the OAT scores are predictive, specifically in reading, among minority participants. Further suggesting that programs and curricular decisions, such as, screening schedules, readiness programs, interventions, etc., can be made in regards to the DIAL-3 assessment score in communities that have a large minority population. The findings from this researcher differs from the previous findings reported by Bishop (2003), who reported that results from a different kindergarten readiness assessment, showed a correlation only to the end of first grade, not beyond.

*Ethnicity and Gender*

Conducting a cross tabulation with ethnicity and gender provides the researcher an opportunity to explore other factors that may influence predictability. According to the research findings, a strong correlation exists with Black males \( r = .85 \) and Multi-race females \( r = .84 \) on the OAT in reading. A moderate correlation for the same group on the OAT Math is also present (Black males, \( r = .58 \), Multi-race females, \( r = .54 \)). Despite the sample size, the results have significance. These results provide administrators data that suggests relationships between
these variables, in regards to the DIAL-3 score and reading achievement, can help guide instructional planning. Such as, identifying students who need intensive instruction as compared to those who only need minor adjustments to their curriculum, for instance, short term assistance on identifying letters and sounds.

A variety of research exists relative to gender and readiness development, some of which strongly support the findings of this study. Researchers further suggest that male students develop verbal and visuomotor skills at a slower rate than female students (Kurdek & Sinclair, 2001). In readiness and gender specific issues, male scores tend to be lower than female scores in both readiness and achievement (Kurdek & Sinclair). Other researchers contend that Black males are identified as not ready for school more often than White students (Ellwein, Walsh, Eads, & Miller, 1991). While the findings in this study support the research of Ellwein, Walsh, Eads, and Miller, in respect to the data from Black males, however the data from Multi-race females contradicts this view. In the present study, Black males scored lower than White students on the DIAL-3 and the OAT in Reading and Math. Similar findings were examined on the meta-analysis conducted by Ellwein, Walsh, Eads, and Miller, in which trends were identified in regards to minority student scores. Although the correlations were positively significant in the present study, the researcher continued to analyze more variables to formulate practical and reasonable conclusions.

**District Type and Ethnicity**

Although ethnicity seems to influence outcomes, the research suggests that environment is the strongest indicator of readiness (Duncan & Magnuson, 2005; Love, 2002; McAlister et al., 2005; Maxwell & Clifford, 2004; Meisels, 1998; Murphey, 2003; Shepard & Smith, 1988). Furthermore, Jackson May (2006) suggests that the variables that influence fourth grade
achievement scores are relative to socio-economic status. In this social constructivist perspective, administrators focus on the family and community as the center of development. Hence, the urban districts, demographically with a higher minority population, need to choose assessment instruments that consider these factors (Rock & Stenner, 2005).

The research from this study suggests that the DIAL-3 has moderate predictability in regards to reading achievement for minority groups in urban areas. Literature is limited in the area of cross tabulation using ethnicity and district type as the variables. However, in a study conducted by Anne Bishop (2003), a significant correlation did exist with similar demographics yielding results reflective for first grade achievement.

Another study examining differences among ethnic groups and the impact social hardships have on achievement is reported by researchers Duncan and Magnuson (2005). The mentioned researchers conclude that the distribution of social hardships is more prevalent with poor, Black and Hispanic children, than with White children; thus creating an unequal starting block. Furthermore, neighborhood conditions greatly influence the family structure, resources, and opportunities. These issues necessitate educators to plan curricular programs that attempt to mediate variables that contribute to early achievement gaps between urban, minority students and their suburban counterparts. Moreover, the ability to predict fourth grade patterns, with ethnic groups in urban areas, is significant for this study.

District Type and Gender

Continuing to focus on district type as the base for analysis, the researcher added gender to examine the influence each variable had on the predictability of the scores. According to Kurdek and Sinclair (2001), male students score lower than females on readiness assessments as well as in reading achievement in the fourth grade. Additionally, Ellwein, Walsh, Eads, and
Miller (1991) also concluded that females outscore males on screening tests. The research findings for this study were slightly different. Male and female students did not deviate significantly between DIAL-3 scores and OAT in Reading or Math. In fact, a mean score of less than a two-point separation existed. Additionally, a correlation coefficient for female urban students for the OAT in reading (r = .47), indicates a possible connection between DIAL-3 scores and reading achievement.

As discussed earlier, when focusing on district type, socioeconomic issues need to be considered. According to a study conducted by Duncan and Magnuson (2005), district types are synonymous with socioeconomics. In respect to the present study, the urban area included a population with a higher rate of economically disadvantaged students than did the suburban or rural areas. Therefore, conceptualizing readiness as it relates to school achievement differs among the three district types.

Additional Analysis

In this research study, district type and gender, analyzed separately, signifies a moderate correlation to predictability between the DIAL-3 and the OAT in Reading and Math. Analyzing the variables separately reflects the methodology of current research. Researchers have focused on one variable when analyzing data and have not cross tabulated the variables, which this study has attempted; thus resulting in slightly different findings. Although, correlations for male students tend to be higher than for female students, it is not absolute. Disaggregating the data show causal relationships that provide an opportunity to assess meaning.

Overall, the urban district gained a higher correlation coefficient than the suburban in most categories, however, on the OAT Math, the suburban participants’ coefficient was slightly higher than the urban OAT Math. These findings differ from the conclusions from other studies
that emphasize setting as the soul indicator for achievement. Davison, Seo, Davenport, Butterbaugh, and Davison (2004), along with Rock and Stenner (2005), suggest that children from lower income families perform drastically different from suburban areas. Although a difference does exist in this category, the overall results show an agreement with the aforementioned researchers.

Another variable examined for correlational patterns was age. The research findings for this study are similar to a study conducted by Kurdek and Sinclair (2001). In both studies, no correlation was found between age and scores on the assessment instruments. In addition, researchers concur that if the age effect disappears as the younger child develops, then age should not be linked to achievement scores in the fourth grade (Kurdek & Sinclair). The results from this study support this perspective.

Conclusions

Research question one examined the correlation between the scores on the DIAL-3 screening instrument and fourth grade scores on the Ohio Achievement Test in Reading and Math for the same students. The researcher conducted a Pearson Correlation Coefficient to determine if the one score correlates to the other. The results indicate a weak correlation may exist for math, but no correlation for reading; similar to the Augustyniak, Calabrese, Cook-Cottone (2004) study. Overall, an exploration of this broad data provides educators with a limited ability to predict achievement outcomes. Essentially, the researcher concluded that other variables play a larger fundamental role in achievement and a detailed examination would enhance the ability to predict outcomes.

Therefore, research question three was disaggregated into three variables, each representing specific characteristics. A closer examination suggests that the variables influence
one another and provide a better opportunity to predict future achievement. For instance, the correlation coefficient for district type alone suggests practical significance among urban and suburban participants. However, when cross tabulating district type by ethnicity the correlation coefficient is quite strong, specifically in reading. Indicating that the DIAL-3 has predictive validity in regards to district type and ethnicity for reading achievement. Furthermore, analyzing gender and ethnicity as well as district type by gender also provides indication of predictability in the content area of reading.

These results suggest that educators in urban districts, specifically, can use the DIAL-3 to identify patterns of achievement, as well as mediate contributing variables. The readiness level of the participants in urban districts was well below other district participants; thus leading to the conclusion that the environment in which the child is reared is a central component in understanding readiness assessment scores. The DIAL-3, according to the present findings, has the ability to identify academic readiness in relation to future academic growth; further, suggesting that these scores help in the identification of proficient on the OAT. The participating urban district had a mean performance level on the fourth grade achievement test of 2.92, just below the state cutoff for proficient. Urban educators may confidently focus on the DIAL-3 score as an indicator for interventions, instructional services and planning. A correlation matrix is provided in Table 12.
An additional question educators need to analyze is why the rural district with a mean score of 66.31 on the DIAL-3 scored higher than the urban and suburban district on the OAT Reading portion in fourth grade. In fact, the rural mean DIAL-3 score was only six points higher than the urban district, yet was eighteen points higher on the OAT in reading. Further research will need to be conducted to make assumptions that suggest that the rural district may have used the DIAL-3 score to plan instruction and intervention or utilized an “academic redshirting” policy. In this case, redshirting refers to the act of withholding a five year old out of school so that he/she can mature before starting school (Shepard, 1997). However, it is not known whether or not inclusive interventions were utilized, or if parents were encouraged to withhold the student from formal kindergarten classes. Urban districts, according to the literature, encourage parents to place children in school rather than delay entry (Shepard). In fact, Shepard contends that this holding-out pattern is a middle-class phenomenon observed in suburban districts. In the present study, the rural district, which has evolved demographically, more closely aligns with the suburban generalization. On the other hand, urban districts, which have a lower socioeconomic base, tend to promote entry at any readiness level (Shepard). Supporting the idea that it is in the best interest of the student to start school.
An additional point to consider is the emphasis placed on boys being “unready” for school. Kurdek and Sinclair (2001) and Shepard (1997) agree that readiness assessments and screening tend to pronounce boys as more unready in comparison to girls. However, in regards to gender specific issues, the boys in this study scored only slightly lower than the females on the DIAL-3, yet the female OAT scores were not significantly higher than the boys’ scores. However, the correlation coefficient for boys was much higher, thus leading to the conclusion that the scores for boys can help in planning curricular programs that will enhance learning.

Recommendations

In review of the perspectives on kindergarten readiness, the findings presented support the interactionist view. This view is comprehensive and focuses not only on the environment, but also the child as well (Pianta & LaParo, 2003; Meisels, 1998; Kagan, 1994). Kagan supports the notion that school’s contribution to the child should focus on all children becoming learners. The results indicate that the DIAL-3 is a resource for schools. If schools can determine what a child knows at a given point, then curricular decisions can be individualized. Paraphrasing Meisels (1998) contention that one curriculum does not fit all, provides opportunities for recommendations utilizing the DIAL-3 score. Understanding the information gained from assessing young children is essential in planning appropriate programs which will enhance the learning environment for all students. Ideally, the DIAL-3 will be able to assist in this pursuit.

Evidence from this study suggests that the DIAL-3 is predictive in nature, especially in reading. According to Mardell-Czudnowski and Goldenberg, the authors of the DIAL-3, poor phonological awareness, lack of letter naming ability, difficulty naming known objects quickly, and poor pronunciation are four of the ten top indicators for identifying young children at risk (1998). Therefore, the first recommendation is for administrators planning to initiate a readiness
assessment program to focus on instruments that recognize these factors as essential in planning curricular programs. This process includes researching different instruments through literature review as well as participating in professional dialogue with other educators.

The findings for this study suggest several practical implications for educators. In general terms, educators should be able to make practical decisions based on the results from this study. According to Michael Hudson (as cited in the “ACT Newsletter”, 2007), President of the National Center for Educational Accountability and Just for the Kids, “Data should be used as a flashlight moving us toward school improvement, and data analysis is the first step.” (p.3) Specific recommendations will differ in regards to district type but may include the following:

Since readiness is environmental, educators should be advocates for early learning. Engaging the community in dialogue is an essential step. Preschool administrators and teachers should be part of the school community. Communication between preschool and the public school should include discussions on standards, indicators of readiness, and goals of the instructional program. Teaming the early learning environment with formal schooling will provide a smooth transition as well as a common vision. For instance, if a public school teaches students to write using the Zaner-Bloser method (block letters), then the preschools in the same locale will also use this instructional method. The same is true of teaching letter recognition. The two school environments should be aligned. The Governors’ Guide to School Readiness developed by the National Governors Association, NGA (2005), suggests that this alignment become a continuum that connects the preschool years with the first three years of public education.

Another recommendation is to advocate for community partnerships within the local district. Community stakeholders, such as local businesses, and parents, need to be aware and
understand the cause and effect relationship between readiness and future academic achievement. Providing an opportunity for this type of community involvement assists in solution identification as well as gaining possible financial resources. Parents of young children have an important perspective that provides a critical voice (Fantuzzo, McWayne, Perry, & Childs, 2004; McAlister et al., 2005). In the urban district, this partnership would greatly enhance the experiences among the students. School districts need to recognize the importance of this partnership through attitudes, policies, and practice (Fantuzzo, McWayne, Perry, & Childs).

Policy

Although few districts have formally written policy on kindergarten readiness assessment and screening, many local districts mandate the use of such instruments (Shepard, 1997). In this study, a predictive relationship between the DIAL-3 and the OAT in Reading and Math was present. Using this data to develop policy within a district is appropriate and provides educators with an avenue for intervening at an early stage. According to Rouse and Fantuzzo (2006), understanding the connection between early childhood experiences and later academic achievement is critical in developing intervention techniques. Therefore, even if a school district does not develop a formal, written policy, a clear statement of purpose and acceptable use document should be included in any discussion on kindergarten entry.

After a clear understanding of the purpose of the screening is established, districts can then identify ways to improve educational programs. According to Davison, Seo, Davenport, Butterbaugh, and Davison (2004), placing emphasis on early childhood education in order to prevent the gaps from emerging is critical. However, the aforementioned researchers suggest, that this would require an alignment of early childhood programs and the K-12 educational system.
Policy on kindergarten readiness needs to focus on entry into the program, not withholding formalized programs from young children. According to a district research director, as cited in Shepard (1997), urban districts have convinced parents that students should be in school as soon as possible, they do not want parents to delay school entry. Pianta and LaParo (2003) suggest that educators need to look at how to improve the quality of the education rather than by focusing on readiness tests. The results from this study suggest that using the results for implementation of effective programming is warranted; concluding that designing an intervention program is beneficial to the students.

An additional recommendation is in support of the data driven decision-making trend. Utilizing the data from the DIAL-3 will help identify students in need of interventions. Intervention, in the truest sense, is the immediate intercession to help prepare a student to succeed as a learner. The intention is not for the eternal placement of a student, rather a short-term initiative to prepare a student to “catch up”. In fact, intervention should be individualized. An example of a possible intervention includes the concept of literacy grouping. In this case, students are placed into groups that focus on specific skills, yet can shift from one group to another when ready. It is also noteworthy that during this time, all students are working on literacy; the pull out philosophy is not present.

An additional recommendation is for early childhood educators to have on-going professional development opportunities that enhance knowledge on the “unready” child. Initially, prior to children entering the classroom, districts should ensure that the kindergarten teacher is highly qualified. Partnerships between the universities and public schools for the advancement of academic achievement in K-12, is an essential component in the intervention process and can aid in the development of qualified personnel. For instance, in order to promote
academic success in the United States, all children need to be considered; learning styles, cultural
differences, and home environments are aspects that are imperative in teaching America’s youth.
Universities can focus on helping early childhood educators become aware of varied pedagogical
methods that enhance learning for all students entering public school.

This study provides a window of the possibilities that are available for educators to
improve on a system that has disparate outcomes. According to Rozansky-Lloyd (2006), it is the
responsibility of the schools to provide cultural capital to our society. This enhances the skills
that all children need to succeed in our society. A goal of education is to help develop future
community members. When students enter kindergarten at varying stages, the “unready” child
many times is not given the profound educational opportunities afforded the “ready” child.
Thus, the impact is a stifling of educational development. Furthermore, these “unready” children
tend to be minority males in urban environments (Davison, Seo, Davenport, Butterbaugh, &
Davison, 2004; Fantuzzo, McWayne, Perry, & Childs, 2004; Frey, 2005; Jackson May, 2006;
Rouse & Fantuzzo, 2006). Additionally, the financial cost associated with retention, reteaching,
and/or dropping out of school is noteworthy and impacts a community. In order to contribute to
society, students need to learn how to share their voice, critically think, and embrace educational
opportunities that promote real world skills (Seidel & Meyer, 2006). It is in the best interest of a
community to understand the importance of early childhood learning and become advocates for
readiness programs.

Overall, educators need to focus on the data and make decisions that will best benefit the
students in their district. Initiating a collaborative approach encourages best practice for
individual students. District accountability is critical and includes responding to what needs to
be done, informing people and providing awareness, offering ideas and assistance to resolve issues, and appreciating contributions from all parties (Redding, 2004).

Future Research Opportunities

Although many studies are available on readiness, discussions need to continue on building an early learning system that promotes readiness for all children. The opportunity to delve deeply into programs that have the ability to prepare students to succeed academically is endless. Focusing on the data from the present study, an examination of the results relating to the possible reasons the rural district performed so well on the OAT in Reading and Math could be conducted.

Additionally, further research needs to be conducted on the variables gender and ethnicity as it relates to predictability. The intent of this researcher was to find patterns which could identify students at risk for the purpose of providing district administrators the ability to plan appropriate curriculum for early learners. The research opportunities in regards to readiness and future academic achievement are vast and include: defining best intervention practice by district type, local funding initiatives to support summer programs prior to kindergarten entry, professional development for early childhood educators, and the feasibility of adding a preschool to the traditional K-12 system. However, focusing on the interactionist perspective, the child and the environment, would assist administrators from all three district types to examine the purpose and intent of the readiness screening program.
REFERENCES


Ohio Department of Education (2005). *Ohio Fourth Grade Achievement Test*. ODE


APPENDIX

Consent Forms

Appendix A: HSRB Approval

Communication Forms/Letters

Appendix B: Formal Letter of Participation Request
Appendix A

September 28, 2006

To: Carol Rosiak

From: Rich Rowlands
Office of Research Compliance

C: Dr. Judy Jackson May

Re: Human Subjects Review Board Project H07D004GE5 – *The Predictive Validity of the DIAL-3 Kindergarten Readiness Screening Assessment as it Relates to Reading and Math Academic Achievement in the Fourth Grade.*

This memo confirms that Bowling Green State University’s Human Subjects Review Board reviewed and approved your application for the above-listed project. That approval was granted on July 11, 2006 for a one-year period. Because this project involves solely access to already existing data and not any direct interaction with children for purposes of data collection, the Board did not require informed consent from parents or assent from the students.
Appendix B

Dear __________,

My name is Carol Rosiak and I am a doctoral student with Bowling Green State University. I am in the data collection stage of my dissertation and request the opportunity to include the ___________ School District in my study. The research I have reviewed has prompted my interest in the curriculum area of kindergarten screening and assessment. The commitment to improving student achievement is at the forefront of my study. Your district’s participation would greatly enhance the research. The approach for data collection will follow all the rules, regulations, and procedures of the Human Subjects Review Board at Bowling Green State University and FERPA.

I welcome an opportunity to discuss your district’s participation, and the professional and ethical options for data collection that I will employ. All participation will remain confidential throughout the entire process; including the formal presentation of the dissertation.

Thank you for your consideration,

Carol Rosiak
lcesc_cr@nwoca.org

Purpose of the Study:
To examine the relationship between pre-kindergarten student test scores on a kindergarten readiness assessment, the Developmental Indicators for Assessment of Learning (DIAL-3) instrument, and test scores for the same students four years later on the mathematics and reading sections of the Ohio Fourth Grade State Achievement Test

Rationale:
• Research is necessary to determine the appropriateness of a kindergarten readiness assessment instrument. The need to analyze the predictive nature of a test is crucial in the attempt to validate the use of such instruments.
• Currently most educators agree that pre-kindergarten screening exams help identify students at-risk and/or students eligible for special services.
• In addition to the positive role assessment may have on the students’ learning, a host of negative implications may need review.

Benefits to Participating School Districts:
• Participation provides an opportunity to find connections or relationships between screening instruments and academic achievement. These findings may be used to inform both practice and policy.
• Information from the research will provide assistance in planning and implementing appropriate programs and curriculum.
• Information gained from the research will facilitate constructive decision-making in regards to the needs of the students and instructional methodology.
• This study will add to the literature on the use of kindergarten readiness assessment as a means to improve education for all children.

*All analyzed data will be presented in a report for each participating school district.*