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Comparing Assessment Measures with Spanish and English Speaking Children

Katrina M. Gill-Glover
University of Nebraska at Omaha

COMPARING ASSESSMENT MEASURES WITH SPANISH AND ENGLISH SPEAKING CHILDREN

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Katrina M. Gill-Glover

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ProQuest LLC.
789 East Eisenhower Parkway
P.O. Box 1346
Ann Arbor, MI 48106 - 1346

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Committee

Brigitte Rigalos

Ellen Jacob

Chairperson Lisa Kelly-Vance

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Katrina M. Gill-Glover, Ed.S

University of Nebraska, 2001

Advisor: Lisa Kelly-Vance, Ph.D.

Practitioners who serve all children are required to administer an accurate comprehensive evaluation of skills in a variety of domains, provide functional information that is easily translated into interventions, and use data to monitor progress. Because of the language and task demands of most standardized cognitive tests, an inappropriate measure of a child's ability may result. Therefore, the need for a linguistically non-biased cognitive measure for early childhood children is necessary. One particular assessment that is proposed is the Play Assessment of Cognitive Skills Scale (PACSS), a functional assessment technique used to determine a child's current level of cognitive functioning through play observation. Although PACSS controls for the problems that are apparent with most standardized measures, no empirical research exists which compares the performance between English and Spanish speaking children. Therefore, the purpose of this study was to examine the differences in performance of both Spanish and English speaking children using both a standardized measure and the PACSS. A significant difference in performance for both groups was not found between the standarized measure and the PACSS. Statistical anlaysis did not reveal any significant differences between the two groups' performance on the PACSS or standardized test.

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Table of Contents

Comparing Assessment Measures with Spanish and English Speaking Children

The practice of how to assess the growing Spanish speaking population in the United States is a concern for practitioners. In early childhood assessment, standardized tests such as the Differential Ability Scales (Elliott, 1990) and the Bayley Scales of Infant Development-Second Edition (Bayley, 1993) are thought to give an accurate picture of a child's cognitive development and are currently used for eligibility determination in conjunction with other measures. Although cognitive measures possess good psychometric properties, they are not without their problems and limitations. Criticism of standardized cognitive tests include: They occur in an unnatural setting, they do not provide the practitioner with functional information that is needed for the development of an Individualized Education Plan, and they do not allow for adequate progress monitoring (Bracken, 1994; Bagnato & Neisworth, 1994; Keogh & Becker, 1973). Furthermore, the linguistic and task demands placed on children when using traditional cognitive measures are foreign to most children and can further complicate the assessment of a Spanish speaking child. Finally, due to the lack of bilingually trained practitioners, to remedy the problem of the language barrier between an English speaking practitioner and a Spanish speaking child the use of translaters has become a popular practice. Unfortunately, the interpreters used can contribute to the inaccurate diagnosis of children who are not native English speakers (Figuero, 1989).

The use of the play assessment in conjunction with traditional standardized cognitive assessment measures is thought to alleviate the problems inherent to most standardized tools. Play assessment allows the practitioner to view the child's cognitive

development through play in a naturalistic environment without placing language demands on the child. However, because play assessment is still in its infancy, few empirical investigations have been conducted that examine its reliability and validity. Furthermore, no studies have examined play assessment with Spanish speaking children. Therefore, the purpose of this study was to compare the cognitive development of both Spanish and English speaking children as measured by both a standardized assessment tool and a play assessment measure.

Literature Review

Prior to discussing play assessment, four important topics must be addressed. First, evidence of the increasing Hispanic-American population will be presented. Second, the federal legislation of early childhood special education will be examined with regards to Spanish speaking children. Third, evidence will be presented which supports the claim that the practice of using a standardized measure may not provide a complete picture of a child's current developmental level. The additional information that play assessment provides may give the practitioner functional information, useful in progress monitoring, regarding the child's cognitive development. Finally, the current research on the cultural differences in children's play behavior will be examined.

Population Growth of Spanish Speaking Children

The fastest growing minority group in the United States is the Hispanic-American population. Hispanic-Americans number 31.7 million people, 11.7% of the population (U.S. Census, 1999). By the year 2005, the growth of the Spanish speaking population is expected to surpass the growth of the African-American population. Presently, one in seven residents of the United States does not speak English at home and Spanish is

spoken by 21 million people (Fisher & Sorenson, 1996; Goldstein, 1996). In addition, Goldstein estimated that over three million Hispanic children in elementary and secondary school spoke English with limited proficiency. Of the total number of children enrolled in kindergarten or nursery school, 8.4 million (13.2%) were Hispanic-Americans (U.S. Census, 1998). Barona and Santos de Barona (2000) stated that the percentage of Hispanic children under the age of five was far greater than that found among other groups in the U.S. population. Therefore, a major concern of professionals who work specifically with the Spanish speaking population is how to appropriately evaluate these children. An appropriate evaluation is not only mandated by federal law but is also important in providing an accurate diagnosis of a child as well as providing information for the development of proper interventions which includes progress monitoring.

Federal Legislation

In the past two decades, the field of Early Childhood Special Education has gone through multiple changes due to modifications in the legislation influencing the assessment of young children. In 1975, the Education for All Handicapped Children Act (P.L. 94-142) was passed, mandating services for all school aged children with disabilities. At that time the law allowed each state to choose whether or not to provide services to preschool children. P.L. 99-457 represented an amendment to P.L. 94-142 and required a multidisciplinary assessment and evaluation for children 3 to 5 who were at risk for educational failure or who had developmental disabilities. Although P.L. 99-457 mandated services for preschool children, it only established incentives for serving infants and toddlers under Part H (McLean, Bailey, & Wolery, 1996).

The reauthorization of P.L. 99-457 came about in 1990 with the passage of P.L. 101-476 which changed the name of the Education of All Handicapped Children Act to the Individuals with Disabilities Act (IDEA). IDEA specified the subtle differences in procedures that were to be followed with children under age three (Part H) and children ages three to six (Part B). Because the services for children ages three to six were an extenuation of school-aged programs, the programs for this group of children tended to be administered and regulated with the Individualized Educational Plan (IEP). Part B differs from Part H of IDEA because Part H does not view the child as the only recipient of services, and therefore adopts a family centered approach to assessment requiring the development of an Individualized Family Service Plan (IFSP) (McLean et al., 1996).

Presently, with the revision of IDEA in 1997, services for children ages birth to five are under Part B and Part C (formerly part H). In order to comply with the federal law, practitioners must assess these children's skills in several domains (i.e., cognitive, physical, language, adaptive behavior, and social development in all evaluations they conduct for eligibility purposes. IDEA specifies three requirements for early childhood evaluations. First, the assessment must be in the child's natural environment if possible and give a comprehensive diagnosis of the child's functioning in several developmental domains. Also, the evaluation materials may not be either racially or culturally discriminatory. Finally, the evaluation materials must be used by qualified personnel and administered in the native language of the parent.

Second, the purpose of early childhood assessment mandated by federal law is to provide functional information for the purpose of creating interventions that guide the development of the IFSP and IEP. Finally, the purpose of early childhood assessment is to

monitor the interventions so as to ensure the child is receiving the services necessary to remediate any existing problem that he or she may exhibit (Nuttall, Romero, & Kalesnik, 1999).

Rationale for Improving Early Childhood Assessment

The rationale for early childhood assessment is that the earlier a child is identified the easier the problem will be to remediate and the greater the likelihood the child has to succeed in his/her future academic environment (Keogh & Becker, 1973). Unfortunately, the practices used in early childhood education are at odds with IDEA. Although the use of standardized cognitive measures serve the purposes for diagnosing a deficit in a child, problems may occur when that child's primary language is Spanish. For example, the unnatural testing situation and the language demands of most cognitive measures may not allow the practitioner to gain an accurate picture of the child's developmental functioning, regardless if the test used is designed specifically for either the Spanish or English-speaking population. Furthermore, standardized tests provide little treatment utility and data which needs to be used for the purpose of progress monitoring. Progress monitoring is important because it aids in determining the effectiveness of the intervention that is used for a child to remediate an early childhood deficit (Bracken, 1994; Bagnato & Neisworth, 1994; Keogh & Becker, 1973).

Traditional Early Childhood Tests

The cognitive component of an early childhood assessment is typically fulfilled by a standardized norm referenced instrument (Bagnato & Neisworth, 1994). Examples of such instruments are the Wechsler Preschool and Primary Scale of Intelligence-Revised (WPPSI-R), the Stanford Binet- Fourth Edition (SB:FE), the Differential Ability Scales

(DAS), and the Bayley Scales of Infant Development-Second Edition (BSID-II). Bagnato and Neisworth (1994) found the most popular tests used in early childhood evaluations of English-speaking children were the SB:FE and the BSID-II. Unfortunately, there are few early childhood measures that have been standardized on the Spanish speaking population. One, the Woodcock Johnson Test of Cognitive Ability is said to depress the child's cognitive score by about twenty points (C. Nero, personal communication, April 4, 2000). Although many standardized tests used in early childhood possess adequate reliability and validity, three main characteristics of these tests may negatively affect the general outcome of a child's determination for special education services. The unfamiliar testing setting, language demand, and the lack of treatment utility, may all contribute to inappropriate service delivery.

Unfamiliar experience with traditional tests. When using standardized instruments, the child is placed in an unnatural testing situation with an unfamiliar examiner. Unfortunately, the unnatural testing situation is not taken into consideration by most early childhood test developers. Early childhood test construction is based on two assumptions. First, early childhood test developers assume that the same format used with children of elementary age is acceptable for younger children. However, the structure of most early childhood tests inaccurately assume that the examinee possess a complex combination of skills that are necessary to adequately complete the items on a particular test. Foreign to most younger children are perceptual, cognitive, and motor, skills all used in conjunction for a successful performance on a standardized cognitive measure (Lidz & Pena, 1996). Children display varying characteristics that are relative to both the task required and learning involved. Furthermore, the environment in which a child is raised,

including his/her socio-economic status and cultural upbringing, is highly influential on his/her performance on a standardized test (Bagnato & Neisworth, 1994).

The second assumption made by test developers is that every child has had equal exposure to the items that are necessary for a successful completion of the standardized test (Shakel, 1986). Generally, the items on the test are taken from the mainstream culture. Children who are from a different culture may not have viewed a particular object or even have a word in their language that denotes the item. Thus, the creaters of standardized tests do not account for variations in exposure due to contextual factors, such as culture. For instance, a preschool child of the dominant culture is two times more likely to attend a school or day care program thus increasing his/her exposure to the dominant culture as opposed to a child of the non-mainstream culture whose primary exposure is specific to his/her family (Barona & Santos de Barona, 2000). Therefore, the traditional approach to standardized assessments can be inherently biasing when applied to children from the non-mainstreamed cultures. Unfortunately, the performance of a non-mainstreamed child on a standardized test may be attributed to differences in cognitive attributes, not contextual factors; this misinterpretation can potentially lead to an inaccurate diagnosis of a child (Lidz & Pena, 1996).

In addition to the child being unfamiliar with the testing environment, the child takes the standardized test with an unfamiliar examiner (Bagnato & Neisworth, 1994). The examiner cannot deviate from the standard administration of a test. Furthermore, accommodations cannot be made for a child who has difficulty answering the questions on a test, which can ultimately influence the reliability of the test (Bagnato & Neisworth,

1994). Therefore, many aspects of the child's prior development and experiences play an important role in the child's performance on a standardized test.

Language demands. Contextual variables, such as culture and language diversity, correlate negatively with the current procedures school psychologists use for evaluating young children (McLean et al., 1996). The Differential Ability Scales (DAS), the Stanford Binet-Fourth Edition (SB-FE), the Bayley Scales of Infant Development-Second Edition (BSID-II), and the Woodcock Johnson Test of Cognitive Ability were all developed in a standard question and answer format that requires English language skills on the part of the child as well as familiarity with the Anglo-American culture. Furthermore, most tests provide a very limited number of responses that are acceptable making it difficult for a child to provide the correct response the test is trying to elicit (Barona & Santos de Barona, 2000).

Shakel (1986) and Duran (1989) warn against the use of intelligence tests with African- American, lower Socio-Economic Status or Hispanic children because these children tend to have verbal performance differences resulting in a score lower than Caucasian children. Moreover, the lower verbal scores cultural minority children receive on vocabulary tests are often attributed by practitioners to be the result of poor cognitive skills. Therefore, inappropriate diagnoses may be made despite the fact that test interpretations are made without the knowledge of diversity in the socialization practices of many cultures that affect the vocabulary development of children (Lidz & Pena, 1996).

In a survey by Bagnato and Neisworth (1994) the SB-FE and the BSID were the two most commonly utilized assessment tools used to measure preschool eligibility evaluations for intelligence or mental development. They found that, if the children's

performance on these traditional intelligence tests had been used to classify for developmental delay in the cognitive domain, 43% of the children who were assessed for eligibility would have been labeled as "untestable". The concept of untestable was used in order to illustrate the intrinsic limitations of early childhood standardized intelligence tests. Among the reasons given for a child to be labeled as untestable were the language deficit of the child and the language demand placed on the child. Despite the failure of the traditional intelligence tests, 91.6% of these untestable children were declared eligible for receiving services when alternative assessment techniques (i.e., checklists) were used in conjunction with the traditional tests (Bagnato & Neisworth, 1994).

To summarize, the SB-FE and the BSID were the two most widely utilized cognitive measures indicated by psychologists in Bagnato and Neisworth's (1994) study. More importantly, the most prominent reasons for a child being labeled as untestable were the language deficits and the demand of language skills when using a standardized measure. Both the SB-FE and the BSID are standardized instruments which require the use of the English language and provide unnatural behavioral demands on a child. Therefore, a Spanish speaking child would be declared as untestable because of the language and behavioral demands placed on the child when using either the SB-FE or the BSID-II.

Treatment utility. The unnatural testing situation and the language demand of most traditional standardized tests may prevent the practitioner from quantifying the child's true abilities which, in turn, does not allow the practitioner to make specific decisions about intervention services. Thus, treatment utility is an important factor to consider when using traditional standardized tests because little information about a

child's particular skill is gained which is to be used in educational planning (Neisworth & Bagnato, 1994). In theory, the assessment should provide functional information that guides the objectives of the IEP. Unfortunately, by using traditional cognitive measures, the school psychologist is able to only provide a single IQ score that does not indicate any individual skill variation within the child (Lidz & Pena, 1996). Thus, the IQ score is of little value to the development of interventions or the IEP objectives for a child.

Provisions for Spanish Speaking Children

In addition to the aforementioned problems of most standardized tests, there are other factors, on the part of the school psychologist, that can potentially contribute to a misdiagnosis in early childhood education. The language barrier between the practitioner and client (both parent and child) not only affects the accuracy of the assessment but also gives rise to the problem of an ineffective delivery of treatment to the child. Furthermore, the scarcity of bilingually trained practitioners and the lack of properly interpreted standardized tests contribute to poor service delivery for young children whose primary language is Spanish (Figuero, 1989; Ochoa, Powell, & Robles-Pina, 1996).

Ochoa et al. (1996) reported that most school psychologists rated the training they received in bilingual evaluation from their programs as less than adequate. Practitioners who are not trained in bilingual assessment are testing Spanish speaking children without the skills necessary to conduct an appropriate assessment (Figuero, 1989). Spanish speaking children are given tests that require them to translate the meaning of the questions from English to Spanish and give either a verbal answer in English or a non-verbal response. These children may not be proficient in the English language and misunderstand a question or respond inaccurately due to the lack of familiarity with the

English language. Furthermore, the sole reliance on the non-verbal portion of a test may not provide the practitioner with an accurate picture of the child's true cognitive ability. As will be addressed, the language barrier between an English speaking practitioner and a Spanish speaking child may not be simply overcome by the use of an interpreter.

Due to the lack of trained bilingual practitioners, the use of interpreters is a practice among school psychologists (Figuero, 1989). This practice, although seemingly appropriate, is not without faults. First, many school districts do not hire interpreters. Therefore, the duty of the interpretation may fall on a bilingual secretary, para-professional, parent, or sibling. Because of the sensitive nature of the testing situation and the child's right to privacy, this practice should not be deemed as "best practice". Using an interpreter to eliminate the language barrier is sometimes too easily characterized as an alternative to pursuing better methods. By requiring bilingual skills on the part of the school psychologist administering the test or utilizing a test that is developed specifically for the Spanish speaking population the problems encountered when using an interpreter could be eliminated (Figuero, 1989).

Unfortunately, when using a formal translation of a standardized test or by informally translating a test developed in English more problems can accure. By either formally or informally translating an English written test into another language the meaning of certain words may be lost and the difficulty of the item may be changed. Specifically, the psychometric properties and the difficulty of items on a test written in English can change whether the practitioner is using a formal translation of a test or an informally translated test. When translating a test, differences in semantic, syntactic, and phonological complexities among the languages is most often not taken into

consideration (Figuero, 1989; Pena, Quinn, & Iglesias, 1992). Moreover, when a practitioner uses a formally translated test that has been standardized in a particular country and used in the U.S. the level of acculturation of the child is often not known or taken into consideration (Figuero, 1989).

School psychologists who are aware of the problems of utilizing an English version of a standardized test indicate that when assessing a bilingual student's intelligence or cognitive ability, the use of nonverbal tests was best practice for elementary aged children. The Wechsler Intelligence Scale for Children (WISC-R or WISC-III) performance scale, Draw-A-Person, Tests of Nonverbal Intelligence (TONI/TONI-2), and Leiter International Performance Scales were reported among the most popular tests used to assess intelligence with Limited English Proficiency students (Ochoa et al., 1996). However, because there are no known tests which can be used with Pre-K, early childhood children, developed specifically for the Spanish speaking population, it would appear that the best practice for testing a Spanish speaking child would involve using a test that either eliminates or controls for the language differences between the practitioner and child which, in turn, would yield a more accurate score for a child who is not a native English speaker.

Alternatives to Current Testing Practices

Limited English proficiency and the lack of familiarity with cultural content of test taking are important factors that may play a role in reducing the reliability and validity of most standardized tests (Duran, 1989). Bagnato & Neisworth (1994) believe that the eligibility practices and procedures of school psychologists are not in accordance with the federal laws and National Association of School Psychologists (NASP)

standards. Furthermore, there appears to be little evidence of the understanding about the multidimensional and developmental nature of early childhood assessment when children are from different cultures. From a developmental standpoint, performance differences on standardized tests of cognitive development between English and Spanish speaking children may not be due to underlying cognitive components but due to maturational issues, cultural influences on behavior, and the language demands that are inherent in most standardized testing situations. Therefore, there is a growing need for alternative assessment tools that are more appropriate to use when evaluating and identifying younger children.

One such alternative routinely used by practitioners is play assessment (Bagnato & Neisworth, 1994). Play assessment offers a less behavioral, and less language demanding form of assessing a child's cognitive development by observing play as it occurs in the child's natural environment. However, prior to providing an in depth analysis of play assessment and its current research, the rationale for using play as a window to a child's cognitive development will be presented. Finally, information about the current literature on cultural differences found in play will be presented.

Evidence to Support the Use of Play Assessment

When evaluating play as an alternative to traditional cognitive testing it is assumed that play is a valid way to observe a child's cognitive ability. Research on this assumption is derived from two theories. The two theories most cited in the discussion about the relationship between play and cognitive development are those proposed by Piaget and Vygotsky. Piaget claimed play was for the purpose of pleasure and practice of previously learned activities. When children pretend to push a stroller, drink from a cup

or feed a baby, they are showing that they know how the object is used. Vygotsky believed that play created thought. According to Vygotsky, cognitive skills have a social origin for children. With the help of a competent adult scaffolding the task, a higher psychological function such as thinking, learning, and problem solving can be elicited (Schaffer, 1996).

The developmental progression in play is evident in both the works of Piaget and Vygotsky. Both of these theories are correct and lend support to the notion that play, although a pleasurable event for children, presents a situation in which children can practice their skills and have the opportunity to learn new ones (Schaffer, 1996). Based on both Piaget and Vygotsky, the development of play maturity proceeds through several stages: Sensorimotor, decontextualization, decentration, and integration. According to Athanasiou (2000), the sensorimotor stage is marked by the child exploring the toys in his/her environment for the primary purpose of pleasure. During this stage play becomes functional. The child learns that the toys, such as blocks, are designed for a purpose, such as building. Throughout the next stage, in the preoperational period, play becomes more complex and symbolic in nature. At this point the development of play progresses through the decontextualization, decentration, and integration phases. Children in these stages use toys to represent other objects when they are engaged in pretend play (Athanasiou, 2000).

Research that supports play as related to a child's cognitive developmental function is offered by Chafel (1991) and Farver, Kim, and Lee (1995). Chafel explained that children exercise diverse aspects of language through play. Play is also associated with convergent problem solving, divergent thinking, logical thinking, and social

knowledge (Chafel, 1991). In general, play can potentially lead to gains in IQ, language development, problem solving, social development, and preparation for later formal schooling (Chafel, 1991; Farver et al., 1995). Furthermore, because children spend the majority of their time playing, it is convenient to use children's play to observe the developmental trends the children exhibit. Therefore, the use of a child's play behavior in determining cognitive ability would be an appropriate, convenient tool for practitioners to use (Linder, 1993). In order to understand the use of play as it pertains to cognitive development, in both Spanish and English speaking children, the cultural differences found in play must first be examined.

Cultural Differences in Play

From the beginning of life a child's first exposure to a relationship starts with the parent when he/she learns how to interact within a dyad. The interactions within this dyadic relationship set the stage for future play relationships. Each society has its own idea of how a child should be raised. The society then carries out the plan according to the established norms. The plan or expectations prescribed by each culture will have an impact on the child's group and solitary play (Schaffer, 1996). Although there is no known research which examines cultural differences in children's solitary play, the literature on dyadic play offers some differences in behavior that a child may bring to the stage of group play. Therefore, dyadic play will be examined followed by a discussion on group differences for English and Spanish speaking people.

From the moment children are born they become socialized into an environment that the parent provides. The quality of parent-child interaction and its affect on child development has been given much attention in the developmental literature. The first

social experiences of the child come from the interactions with the parent (Schaffer, 1996). The interaction between parent and child offers a unique opportunity to shape the child's development through communication and play. Vygotsky believed that everyday conversation may allow for scaffolding because the learning first occurs on the social plane and then it is transferred to the individual plane (Tenenbaum & Leaper, 1998).

Scaffolding is defined as support, in the form of clues, reminders, or encouragement which aids the learner to progress to the next step in the sequence of learning (Woolfolk, 1998). The concept of scaffolding has been the target of research with Mexican American dyads. Tenenbaum & Leaper (1998), examined gender effects on Mexican-descent parents' questions and scaffolding during play. Tenenbaum and Leaper (1998) found that Mexican-descent mothers were more likely to scaffold the child's learning than the Mexican-descent fathers.

In a related study, Franco, Fogel, Messinger, and Frazier (1996), examined the cultural differences of close physical contact and touch differences of mother-infant Hispanic-American and Anglo-American dyads. For both groups the mothers' touch time was equal; however, Hispanic-American mothers were more close and affectionate (kisses, gentle touches) whereas Anglo-American mothers were more distal (played with child at arms length). Furthermore, the Hispanic mothers would lay on the floor and play with the child and the Anglo-American mothers would stay seated upright to play.

Farver and Howes (1993) examined American and Mexican mother-child dyads to investigate the extent to which cultural differences are evident in play. For both the American and Mexican mother-child dyads, the mothers modified their child's play

behavior in the direction of the goals and values that are consistent with their culture. American mothers demonstrated more implicit guidance, supported their children's efforts, and suggested more fantasy play than their Mexican mother counterparts. In the American setting, child-centered play was valued for its educational benefits. Expansion of play was brought about by the mother's facilitation of the play context. Symbolic level play and the frequency of joint cooperative pretend play were encouraged in the American mother-child dyad. In the American dyad, the scaffolding of pretend play by the mother allows the child to engage in pretend play, first with the mother, and eventually the child will begin to construct his/her own play themes (Farver & Howes, 1993).

In contrast to the American dyad, Farver and Howes (1993) found that play is considered to be unimportant and only for a child's amusement to the Mexican mothers. Mother-child play was not found to be a common feature in the Mexican setting. This could be a result of the Mexican environment which lends itself to the development of play in the context of sibling interactions not originated by adults. Furthermore, unlike their American counterparts, Mexican children's symbolic or pretend play does not appear to originate with the mother-child dyad. Pretend play probably originates with siblings or other children in the environment. Finally, the mother's play was seen as an explicit teaching model based on a work theme rather than play (Farver & Howes, 1993).

The differences in play exhibited in the Mexican and American groups is thought to be reflected in the cultural beliefs of each group of people. Typically, the role expectations of males and females in both the American and Mexican populations are similar. Boys are to play with soldiers, guns, and other masculine toys, while girls are to

play with dolls and kitchen sets and other feminine toys (Guerrero, 1975). However, there are many differences between Anglo and Hispanic-American people.

Ardilla-Espinel as cited by Franco (1996), believes that the Hispanic-Americans are more motivated by affiliation and communal involvement. This is evident in the way the parent plays with the child. Parents demonstrate close interaction with their children and play that is in the context of siblings. Hispanic-Americans are also viewed as more field dependent. People in this culture are taught to rely on each other to get their needs met. Furthermore, Hispanic-Americans are taught to be loyal to family members, respect adults and demonstrate religiosity (Negy, 1993).

In contrast, the Anglo-American culture is thought to be more field independent, individualistic, and achievement motivated. These characteristics are present in the dyadic interactions between parent and child. Mothers scaffold pretend play to prepare the child to create his/her own play themes so the child may rely on him/herself for play behaviors (Ardilla-Espinel as cited by Franco, 1996). In addition, Anglo mothers played with their children at arms length, encouraging individualistic behavior. Anglo-American parents stress play for its educational benefits which makes this culture more achievement motivated.

The differences between English and Spanish speaking children in the dyadic relationships previously discussed are examples of how children can potentially exhibit different behaviors when playing based on their parents' cultural orientation. However, there is no research pertaining to the topic of cultural differences between Spanish and English speaking children in group or solitary play. In general, the only difference in play that is evident between the two cultures is the origin of pretend play and symbolic play. In

the American culture both types of play originate with the parent, while in the Mexican culture both types of play originate with the siblings. Furthermore, both cultures are similar with regard to gender stereotypes. In solitary play, boys in general will play with more masculine-type toys while girls play with more feminine-type toys, regardless of the child's cultural background. Therefore, because play assessment examines a child's solitary play, it is likely that the cultural background of the child will not have an impact on the assessment.

Play Assessment

Observing a child's cognitive, social, emotional, language, and motoric development through play is not a new concept. The assessment of a child's current development using play offers a more functional, holistic, less contrived, and perhaps a more accurate picture than when using a single standardized assessment measure. Using play assessment is advantageous because language and behavioral demands are not made on the child. Furthermore, play assessment is becoming a popular technique used by many practitioners because it is convenient, practical, and flexible, thus allowing for a less threatening testing situation (Anthanasiou, 2000; Bagnato & Neisworth, 1994).

Currently, a variety of play assessment methods are employed. The play assessments utilized may differ with regards to the delivery of the session. The coding of play behaviors, structure of setting, toys utilized, length of session, and whether certain play behaviors are elicited or not are all variables that differentiate the types of play assessment techniques some practiconers use (Anthanasiou, 2000).

For example, the Play Assessment Scale (PAS) consists of 45 developmentally sequenced items used to assess children 2 to 36 months (Fewell & Rich, 1987). As can be

seen, the PAS has a limited age range thus rendering it useless for older early childhood children. Furthermore, the PAS was not standardized on a representative sample and gives no evidence of reliability or validity (Anthansiou, 2000). In addition, Lowe and Costello (1976) developed the Symbolic Play Test. This play assessment uses four toy sets from which the examiner scores the child's level of performance. Unfortunately, this play assessment technique does not encompass younger children because symbolic play is thought to not develop until the child is about two. Although this is not an exhaustive list of the less popular variety of play assessment scales that have been developed, it offers a few examples of how play is thought by some to be an important, viable, functional, and more convenient tool for practitioners to use in lieu of a standardized measure.

Perhaps the most popular type of play assessment is Transdisciplinary Play Based Assessment (TPBA) developed by Linder (1993). TPBA can be used with children from infancy to age six. This approach utilizes a team of professionals and parents which observe and partake in a child's play. TPBA addresses the child's cognitive, social-emotional, communication, language, and sensorimotor development. This model of assessment is different from traditional standardized tests for three important reasons. First, when using a child's play, rapport is easily achieved because there are no behavioral demands placed on the child. The child is able to play freely with any toy he/she chooses without the direction of an adult. Second, language demands are not placed on the child. The child is not called upon to respond to any questions presented in a rote format requiring a limited repetoire of answers, as does happen with traditional cognitive measures. Finally, the functional utility of play assessment is evident. Viewing the child in his/her natural environment of play allows the team to translate the information

received from the play session into functional, viable strategies for interventions or for objectives that can be addressed on the child's Individual Education Plan (IEP) which can then be easily monitored for progress (Linder, 1993).

To date the TPBA model of play assessment has very few studies which examine its reliability and validity. Of the studies that have been published, most use a very small sample size (Anthanasiou, 2000). Kelly-Vance, Needleman, Troia, and Ryalls (1999) explored the relationship between TPBA and the BSID-II with 38 two year old at risk children. Results indicated a significant difference between TPBA scores and the MDI scores from the BSID-II. TPBA scores were found to be higher, indicating the possibility that the BSID-II may be an under-representation of a child's true developmental ability.

Because of the lack of research in this area, Kelly-Vance et al. (1999) presented multiple explanations for the higher TPBA scores: TPBA is more subjective, and adult facilitation during TPBA may have contributed to the higher scores. In addition, the child's performance level may have been affected by the different techniques employed by the two tests.

However, the higher scores yielded by the play session when compared to the BSID-II may actually be the child's true developmental level. This rationale is supported by Calhoon (1997) who compared the Rossetti Infant-Toddler Language Scale, a transdisciplinary play-based assessment tool, to the Preschool Language Scale-3 for four children who were receiving outpatient speech-language services. Calhoon concluded that the majority of the time the play-based assessment produced higher performance levels on expressive and receptive language skills than a standardized assessment tool. Moreover, the play assessment identified language skills that were emerging, not yet mastered, in the

child that could potentially be used in planning intervention objectives. Although the preceeding research offers promising results supporting the use of play assessment, little research exisits examining its reliability and validity.

Recently, Farmer-Dougan and Kaszuba (1999) examined the reliability and validity of a play assessment measure. The study examined the relationship between the Play Behavior Observation System and two standardized measures: the Battelle Developmental Inventory (BDI) and the Social Skills Rating Scale-Teacher (SSRS-T). The play assessment measure was found to be predictive of the BDI and SSRS-T scores. Children who engaged in higher levels of play behaviors received higher scores on both the BDI and the SSRS-T while children who were observed to have higher levels of solitary play behaviors were rated to be more disruptive in the classroom, less competent in initiating conversations, and less cooperative. However, because play assessment is in its infancy, all of the authors investigating play assessment cautioned that more controlled empirical research needs to done to examine its benefits.

Summary and Conclusion

The growth of the Hispanic-American population will soon surpass that of other minority groups. The practitioners who must adequately assess Spanish-speaking children must acknowledge the methodological limitations that occur when using a traditional standardized test with children in this population. Because of the unnatural setting in which children are tested, the language demands made on children during standardized testing, and the poor treatment utility or lack of functional information provided, the methods employed by practitioners for testing bilingual children may not represent adequate measures of the children's abilities.

In addition, the lack of trained translators and bilingual practitioners are contributing factors which may ultimately lead to the misdiagnosis of young children.

Proposed Study

The current practices for assessment of bilingual children are not in accordance with the federal laws. Language demands and the constraints placed on a child by the use of traditional standardized tests may lead to an under-representation of the child's true developmental ability. The PACSS is offered as a viable alternative to the traditional cognitive measures. Although the empirical research on play assessment is still in its infancy, the method is widely used by practitioners (Bagnato & Neisworth, 1994). When viewing a child's play, however, cultural differences between Spanish speaking and English speaking children have not been addressed. Furthermore, cultural differences were not emphasized in Linder's TPBA manual (Nuttal, Romero, & Kalesnik, 1999). Based on the proceeding information, the following questions are raised and hypotheses are made:

Research Questions and Hypothesis.

1. How will English and Spanish speaking children's performance compare using a standardized measure?

Because of the contextual demands; language, task, and cultural upbringing inherent to standardized measures, it is hypothesized that the English speaking children will score higher than the Spanish speaking children.

2. When comparing the standardized measure and the PACSS score will there be any differences in the scores of both the Spanish speaking and English speaking population?

Based on the results of Kelly-Vance et al.'s (1999) study, the PACSS score is hypothesized to differ from the MDI or GCA score for both Spanish and English speaking children because a child's play in a natural environment will yield a truer score than in a contrived setting such as with the standardized measure.

3. How will cultural differences in play between English and Spanish speaking children impact the child's score when using PACSS?

There are no studies which address the differences in solitary play between Spanish and English speaking children. However, the expectations of each culture is that boys play with masculine toys and girls play with feminine toys. Therefore, it is hypothesized that the cultural background of the child will not affect the PACSS score.

Method

Participants

The participants were 18 children recruited from Midwestern Head Start programs. Seventeen of the children were reported by their parents to be typically developing. One child had been receiving speech services in another state but no longer was receiving services in the Midwest. Nine children were from homes where Spanish was the predominant language spoken (4 males, $\underline{M}$ = 49.25 months; 5 females, $\underline{M}$ = 47.40 months). The Spanish speaking children were from a variety of countries including; Mexico, Argentina, El Salvador, and Guatemala. The remaining nine children were native English speakers (5 males, $\underline{M}$ = 51 months; 4 females, $\underline{M}$ = 47.75 months). Of the English speaking population eight were African American and one was Caucasian. To protect the identity of the child, each was labeled either SS for a Spanish-speaking child or ES for an

English-speaking child and numerated in a sequential order depending on the date of the child's participation.

An attempt was made to match the children from the two populations by both age and gender (Table 1). However, a match was not found for one ES female nor one SS male, between the ages of 30-40 months. A preliminary gender and age analysis was run. The results revealed non-significant differences between the English and Spanish samples regardless of the missing matches.

Setting

The research took place at the University of Nebraska at Omaha. The play room used in this study was filled with a variety of toys. The toys contained within the testing area were thought to elicit various types of play. For instance, blocks and puzzles tend to be associated with nonsocial parallel play which elicit problem solving strategies, while dress up clothes, trucks, and dolls tend to elicit more realistic pretend play (Carlson, Taylor, & Levin, 1998). Each parent completed two forms available in English and Spanish depending on the parent's choice. One form contained information regarding exposure to toys similar to those found in the play room (Appendix A1 & A2) and the other form pertained to the parent's and child's demographic information (Appendix B1 & B2).

Assessment Instruments

The Bayley Scales of Infant Development-Second Edition (BSID-II) or the Differential Abilities Scales (DAS) was used to assess the cognitive skills of each of the children within two weeks after the play session. The BSID-II was used with the children who were 30-42 months and the upper preschool level of the DAS was used for the

children who were over 43 months. The PACSS was used to establish the cognitive ability of each child.

Bayley Scales of Infant Development-Second Edition. The BSID-II was standardized on a representative population of the United States according to the 1988 U.S. Census. The BSID-II consists of a mental, motor, and behavior scale. For the purpose of this research, the mental scale was used. The mental scale of the BSID-II gives a normalized standard score, the Mental Development Index (MDI). The MDI score represents the child's current level of cognitive functioning. The BSID-II possesses good psychometric properties. The reliability coefficients range between .78 and .93 for the MDI. Criterion referenced, construct, and convergent validity are addressed in the manual and appear adequate (Bayley, 1993).

Differential Abilities Scales. Like the BSID-II, the DAS was standardized on a representative population of the United States approximating the 1988 U.S. Census data. According to Elliott (1990), the reliability of the DAS is .94 for the upper Preschool Level. The DAS yields an intellectual quotient referred to as the General Cognitive Ability (GCA). The GCA is comprised of a Verbal and a Non-verbal cluster. The Verbal cluster is made up of two subtests; Verbal Comprehension and Naming Vocabulary. The Non-Verbal Cluster is comprised of three subtests; Picture Similiarites, Pattern Construction, and Copying. The subtest Early Number Concepts, although not contained within the Verbal cluster score, is thought to load more onto the verbal portion of the test versus the non-verbal portion.

Play Assessment of Cognitive Skills Scale. The PACSS was used to determine the participants' cognitive development through play (Kelly-Vance et al., 2000). The

PACSS is an observational coding system divided into core and supplemental domains. The core play domains consist of Early Object Use, Symbolic/Representational Skills (Decentration, Decontextualization, and Integration), and Non-play behaviors. The supplemental domains are composed of: Problem Solving Skills and Planning, Imitation Skills, Discrimination/ Classification Skills, One to One Correspondence, Drawing Skills, and Sequencing Abilities (see Appendix C). Prior to determining a child's cognitive ability through play, each of the videotaped play sessions were transcribed and the cognitive coding scheme was used by two independent raters who coded four randomly chosen play sessions (Ryalls et al., 1999). Inter-rater reliability was determined to be 85.25%.

To code the play session using the PACSS each thirty minute play session was broken down into 60 segments of 30 seconds of play behavior. Of the 15 play sessions four did not contain 60 segments. Two SS play sessions contained only 55 and 53 segments of codable play behavior and two ES play sessions contained 56 and 54 segments of codable play behavior. During each segment the experimenter determined the child's core play code to be either Early Object Use, Symbolic and Representational Skills (Decentration), or Non-Play. In addition, during each play segment, if present, supplemental play behavior was coded (i.e., Problem Solving and Planning, Imitation, Discrimination and Classification, etc.).

Once each child's play session was coded the frequency of every observed core and supplemental play domain was tallied. Before the child's cognitive ability was determined each core play code was assigned the same numerical value (A1=1, A2=2, A3=3, A4=4, A5=5, A6=6, Ba1=7, Ba2=8, Ba3=8, and Ba4=9). To determine the child's

cognitive ability the frequency of the core play behavior was multiplied by the particular core code's numerical value and then all of the values were added together. The resulting value was then divided by the number of codable segments less the number of observed non-play behaviors.

For example, of the 60 codable play segments participant ES6 had 12 non-play behaviors. In the remaining 48 play segments one contained a unitary functional activity (A3=3) and 47 contained appropriate combinatorial/complex exploration (A5=5). Therefore, 1 was multiplied by 3 (A3) and 47 was multiplied by 5 (A5). The resulting numbers, 3 and 235, were then added together yielding the sum of 238. The total was then divided by the number of codable play segments (48) which resulted in the PACSS score for this particular child (4.96).

Procedure

The session facilitator contacted the parent prior to the scheduled day of the child's arrival. For the Spanish-speaking children, the translator scheduled the play appointment. The translator used in this study was consistant throughout both the play session and the standardized test administration. She was a fluent Spanish speaker teaching at a local high school. Transportation from a local cab company was provided to those families who were in need. On the scheduled day for participation one child and his/her parent arrived at the playroom of the university for the thirty minute play session. The session facilitator reviewed the permission form and the procedures that were followed during the play session in the parent's native language (Appendix D1 & D2). Once the parent, child, and session facilitator entered the room taping began. The child was instructed to play.

At no time during the session did the parent, camera operator, or the session facilitator direct the child's play by using either verbal or physical prompts. The research team and the parents were instructed to behave as they would normally while the child played so as to ensure that the child would feel comfortable in the testing situation. All of the persons in the room were able to say a pre-selected variety of phrases that were posted around the room (e.g., 'good job', 'this is fun'). These pre-selected phrases were in both English and Spanish and reviewed with the parent prior to the start of the play session.

At the conclusion of the session the session facilitator asked the parent if the play the child exhibited was typical for him/her. Upon leaving, the child received a small prize for his/her participation and the parent received a gift certificate. A time when the standardized measure would be administered was mutually agreed upon by both the session facilitator and the child's parent at the conclusion of the play session.

Dependent on the child's age, either the BSID-II or the DAS was administered to each of the children within two weeks of the play session. The standardized test was administered either at the child's Head Start center, his/her home or at the University depending on the parent's request. The BSID-II and the DAS were conducted in English. In order to control for the presence of a third party during the testing of the Spanish speaking children a research assistant was also present during the administration of the test for the English speaking children.

Data analyses. Three separate analyses, all with a significance level set at $p<.05$, were conducted. The first analysis used an independent samples t-test to compare the ES and SS cognitive scores from the standardized measure (MDI from the BSID-II or the GCA from the DAS). The second analysis used a paired samples correlation of the

PACSS and the IQ scores from both groups. The final analysis was more descriptive in nature. First, an independent samples t-test was computed to examine if any differences existed between the SS and ES participants' PACSS scores. Then the core and supplemental subdomains of the PACSS were reviewed to determine any cultural differences that existed between the play behaviors of the English speaking and Spanish speaking children.

Results and Discussion

The field of early childhood offers a wealth of opportunities for a child to be inaccurately diagnosed as needing special education. The uneven growth in the areas of language, cognition, social and emotional, and motoric development compounded by the language and behavioral demands placed on a child, regardless of his/her own cultural background, frequently encountered when using a standardized assessment measure all can potentially contribute to an inaccurate diagnosis of a child. Therefore, the purpose of this study was to explore the cognitive development of Spanish and English speaking children as meausured by both a standardized assessment test and a play assessment measure. Furthermore, because of the lack of research addressing the culture differences in solitary play between English and Spanish speaking children a descriptive analysis using the PACSS core and supplemental play domains was provided.

The first research question sought to shed light on the differences in performance between both English and Spanish speaking children when using a standardized measure. The contextual demands, namely culture, language, and familiarity with the task that are inherent to a standardized test were thought to be of a disadvantage to preschool children, especially those who were non-English speaking. In this study, the mean IQ score for

each group was 82.00 and 80.33 for the Spanish and English speaking children, respectively. An independent samples t-test revealed a non-siginificant difference between the two groups ($t = .37$, $p > .05$). Thus, it appears that the SS were not at a disadvantage when given a standardized test which was informally translated into their native language when compared to the ES participants.

To address the second research question the entire population of participants was used to explore the differences between the scores the children received on the PACSS and the standardized test. Because the use of a standardized measure places both behavioral and language demands on children, the play assessment session was thought to be able to elicit a more accurate measurement of cognitive development. The mean score on the standardized measure was 81.17 while the mean score on the PACSS was 5.47 (range of 3.65 to 6.95). A paired samples correlation revealed non-significant differences between the PACSS and the standardized measure ($r = -.086$, $p > .05$). Thus, the PACSS and the standardized measure have a weak negative correlation. The finding is possible for two reasons. First, the play session was more natural to the child when compared to the standardized measure. The children were not required to verbally respond to a predetermined number of question with a limited number of possible correct answers. Second, the rater's opinion and judgement played far more of a role in determining the child's cognitive ability then when using a standardized measure. The child's ability was solely determined by what he or she showed during the play session.

The third hypothesis was twofold. First, the question of cultural differences in play was to be answered by the use of the PACSS. Second, a descriptive analysis of the play session examining both groups was carried out. The mean PACSS score for the SS

children was 5.15 compared to 5.79 for the ES children. As predicted, the differences between the two groups was non-significant ($t = -1.613$, $p > .05$). Similar to a standardized instrument, in play assessment, the lack of exposure the child has to the relative stimuli may be the cause of his/her poor performance rather than the child's true ability (Barona & Santos de Barona, 2000). Unike the items on the standardized tests, the majority of children in this study were familiar with the toys found in the play room. They had been exposed to such toys as the play telephone, kitchen set, pop-up machine, blocks, or puzzles either at home or the Head Start center the child attended.

Because each culture places the same expectations on its children, no differences between the two groups was expected. However, there were a few noticable differences between the two groups of children during the play sessions that are worth noting when the problem solving/planning and discrimination/classification supplemental play domains were analyzed. Only the problem solving/planning and discrimination classification domains were compared because every participant performed a play behavior in either one or both domains.

As a whole, all but one SS child displayed some level of the problem solving/planning behavior play domain. The highest level of problem solving ability observed was demonstrated by three SS children who were all able to use the blocks to build a complex structure containing at least nine pieces. Although some of the SS children's counterparts did play with the blocks, none of the children demonstrated the same problem solving/planning ability. Furthermore, an equal number of SS and ES children demonstrated discrimination/classification skills. However, only one ES child displayed the highest level observed, accurately naming three or more colors by name.

None of the SS children were observed to spontaneously name the color of any object in the play room.

Implications for Practitioners

The present research offers two specific implications for practitioners who are working within the field of early childhood, especially when Spanish speaking children are in need of a cognitive assessment. First, by using a play assessment tool a child's true cognitive ability may be revealed without behavioral and language limitations that are inherent to a standardized assessment tool. For instance, a child is not penalized for any language barrier which may exisit between the practitioner and the child. The child is not required to provide a direct response to any question or perform a particular action which he/she would have a limited repetoire to choose from on a standardized test. Moreover, functional information about the child's current abilities can be easily translated into interventions for an Individualized Education Plan.

Second, prior to this study there was no known research which directly assessed the differences in solitary play between English and Spanish speaking children. Now, practitioners will be able to examine a child's play behavior as a window to his/her cognitive development with some information about how both groups of children display similar characteristics of play behaviors. However, because the study contained a small sample size, the observed differences in the children's play as measured by the supplemental domains, should prompt future research to further address these areas prior to making any generalizations made.

Limitations and Future Research

In general there are three specific caveats of the present study which should be addressed in future research of play assessment. First, in the future, a larger population should be utilized. In the present study a larger population sample may have revealed significant results when exploring the difference in performance on the standardized measure. However, as previously mentioned, the majority participants were either Hispanic or African-American and all from lower socio-economic status. Thus, their verbal performance may have been lower, according to Shakel (1986) and Duran (1989), as when Caucasian children are used in a sample as a comparison. Furthermore, although a significant difference between the PACSS and the standardized measure was not revealed the correlation indicates that the instruments may be measuring different aspects of the child's cognitive development.

Second, neither the level of inculturation nor ethnicity was controlled for within the Spanish speaking population. Although all of the children were from lower socio-economic homes and had some level of exposure to the majority culture through their participation in the Head Start program, the level of inculturation, or the duration of the child's involvement with the program was not controlled for this study. Furthermore, the study did not control for ethnicity or diversity of language. Although all of the SS children spoke Spanish, not all spoke the same dialect. Some of the children were from Mexico, Argentina, El Salvador, and Guatemala. This posed some difficulty for the children due to the various word meaning differences among the dialects. For instance, in some dialects car is coche while in others it is carro or auto. An answer to an item from the standardized test could not be translated by a child because that particular dialect did

not offer a translation for the English word. Future research exploring the differences between the two groups should focus on obtaining a homogeneous sample of Spanish speaking children.

Summary and Conclusion

The purpose of this investigation was to compare the cognitive development of Spanish and English speaking children as measured by both a standardized assessment tool and a play assessment measure. Contrary to the literature, there were no differences found in performance between the two groups when a standardized measure was used. Furthermore, a significant difference between the standardized measure and a play assessment tool was not revealed. This finding is interesting in light of the previous research which demonstrated that a play assessment measure yields a higher level of ability when compared to a traditional measure. Finally, as previously addressed, there were no cultural differences in the play behaviors of the English and Spanish speaking groups with the exception of two supplemental play domains. The highest level of problem solving/planning ability was displayed by a SS child while the highest level of discrimination/classification skill was demonstrated by an ES child.

References

Anthanasiou, M. S. (2000). Play-based approaches to pre-school assessment. In Braken, B. A. (Eds.), The Psycho-Educational Assessment of Preschool Children. (3rd. ed.) (pp. 412-427). Needham Heights, MA: Allyn & Bacon.

Bagnato, S. J., & Neisworth, J. T. (1994). A national study for the social and treatment invalidity of intelligence testing for early intervention. School Psychology Quarterly, 9, 81-102.

Barona, A., Santos de Barona, M. (2000). Assessing multicultural preschool children. In Braken, B.A. (Eds.), The Psycho-Educational Assessment of Preschool Children. (3rd. ed.) (pp. 282-296). Needham Heights, MA: Allyn & Bacon.

Bayley, N. (1993). Bayley Scales of Infant Development: Second Edition. San Antonio, TX: The Psychological Corporation.

Bracken, B. A. (1994). Advocating for effective preschool assessment practices: A comment on Bagnato and Neisworth. School Psychology Quarterly, 9, 103-108

Calhoon, J. M. (1997). Comparison of assessment results between a formal standardized measure and a play-based format. The Transdisciplinary Journal, 7, 201-214.

Carlson, S. M., Talyor, M., & Levin, G. R. (1998). The influences of culture on pretend play: The case of Mennonite children. Merrill-Palmer Quarterly, 44, 538-565.

Chafel, J. A. (1991). The play of children: Developmental processes and policy implications. Child and Youth Care Forum, 20, 115-132.

Duran, R. P. (1989). Assessment and instruction of at-risk Hispanic students. Exceptional Children, 56, 154-158.

Elliott, C. D. (1990). The Differential Ability Scales. San Antonio, TX: The Psychological Corporation.

Farmer-Dougan, V., & Kaszuba, T. (1999). Reliability and validity of play-based observations: Relationship between the play behavior observation system and standardized measures of cognitive and social skills. Educational Psychology, 19, 429-441.

Farver, J. M., & Howes, C. (1993). Cultural differences in American and Mexican mother-child pretend play. Merrill-Palmer Quarterly 39, 344-358.

Farver, J. M., Kim, Y. K., & Lee, Y. (1995). Cultural differences in Korean-and Anglo-American preschoolers' social interaction and play behaviors. Child Development, 66, 1088-1099.

Fewell, R. R., & Rich, J. S. (1987). Play assessment as a procedure for examining cognitive, communication, and social skills in multihandicapped children. Journal of Psychoeducational Assessment, 2, 107-118.

Figueroa, R. A. (1989). Psychological testing of linguistic-minority students: Knowledge gaps and regulations. Exceptional Children, 56, 145-152.

Fisher, L., & Sorenson, G. P. (1996). School Law for Counselors, Psychologists, and Social Workers. White Plains, NY: Longman Publishers.

Franco, F., Fogel, A., Messinger, D. S., & Frazier, C. A. (1996). Cultural differences in physical contact between Hispanic and Angle mother-infant dyads living in the United States. Early Development and Parenting, 5, 119-127.

Goldstein, B. A. (1996). The role of stimulability in the assessment and treatment of Spanish-speaking children. Journal of Communication Disorders, 29, 299-314.

Guerrero, D. R. (1975). Psychology of the mexican: Culture and personality. Austin, TX : The University of Texas Printing Division.

Http://fact-finder.census.gov (March, 1999).

Http://fact-finder.census.gov (March, 1998).

Kelly-Vance, L., Needelman, H., Troia, K., & Ryalls, B. (1999). Early childhood assessment: A comparison of the Bayley Scales of Infant Development and Play-Base Assessment in two-year old at-risk children. Developmental Disabilities Bulletin, 27, 1-15.

Kelly-Vance, L., Gill, K., Schoneboom, N., Cherney, I., Ryan, C., Cunningham, J., Ryalls, B. O. (2000, April). Play-Based Assessment: Issues, Challenges, and Recommendations. Poster session presented at the annual meeting of the National Association of School Psychologits, New Orleans, LA.

Keogh, B. K., & Becker, L. D. (1973). Early detection of learning problems: Questions, cautions, and guidelines. Exceptional Children, 40, 5-11.

Lidz, C. S., & Pena, E. D. (1996). Dynamic assessment: The model, its relevance as a nonbiased approach, and its application to Latino American preschool children. Language, Speech, and Hearing Services in Schools, 27, 367-372.

Linder, T. W. (1993). Transdisciplinary Play-Based Assessment. (2nd ed.). Baltimore: Paul H. Brooks.

Lowe, M., & Costello, A. J. (1976). The Symbolic Play Test. Berkshire, England: NFER-Nelson.

McLean, M., Bailey, D. B., Jr., & Wolery, M. (1996). Assessing infants and preschoolers with special needs. (2nd ed.). Englewood Cliffs, NJ: Prentice Hall.

Negy, C. (1993). Angle-and Hispanic-Americans' performance on the family attitude scale and its implications for improving measurements of acculturation. Psychological Reports, 73, 1211-1217.

Nuttall, E.V., Romero, I., & Kalesnik, J. (1999). Assessing and Screening Preschoolers. (2nd Edition). Needham Heights: Allyn & Bacon.

Ochoa, S. H., Powell, M. P., & Robles-Pina, R. (1996). School psychologists' assessment practices with bilingual and limited English-proficient students. Journal of Psychoeducational Assessment, 14, 250-275.

Pena, E., Quinn, R., & Iglesias, A. (1992). The application of dynamic methods to language assessment: A nonbiased procedure. The Journal of Special Education, 26, 269-279.

Ryalls, B. O., Gill, K., Ruane, A., Cherney, I., Schoneboom, N., Cunningham, J., & Ryan, C. (2000, April). Conducting Valid and Reliable Play-Based Assessment. Poster presented at the annual meeting of the National Association of School Psychologists, New Orleans, LA.

Schaffer, H. R. (1996). Social development. Massachusetts: Blackwell Publishers.

Schakel, J. A. (1986). Cognitive assessment of preschool children. School Psychology Review, 15, 200-215.

Tenenbaum, H. R., & Leaper, C. (1998). Gender effects on Mexican-descent parents' questions and scaffolding during toy play: A sequential analysis. First Language, 18, 129-147

Woolfolk, A. E. (1998). Educational psychology. Needham Heights, MA: Allyn & Bacon.

Table 1

Participants by Gender and Age

Gender	Age in Months	
	Spanish Speaking	English Speaking
Male	54	59
Male	63	59
Male	50	57
Male	30	40
Male	-	40
Female	56	56
Female	54	54
Female	58	50
Female	34	31
Female	35	-

Note: The dash indicates missing data.

Appendix A1

TOY LIST

*** Please place a check by the toys that your child has at home.**

_____ Kitchen Set	_____ Toy Food
_____ Blocks	_____ Puzzles
_____ Books	_____ Vehicles (trucks, cars)
_____ Dolls	_____ Puppets
_____ Play Telephone	_____ Cash Register
_____ Crayons	_____ Farm Set
_____ House Set	_____ Toy Camera
_____ Mechanical or Pop up Toys	_____ Large Plastic Beads
_____ Play Animals (dinosaurs, dogs)	_____ Shape Sorter

To Be Completed by the Parent Facilitator:

Notes:_____

_____

_____

_____

Appendix A2

LISTA DE JUGUETE

*** Porfavor, marca todos los juguetes que su niño tiene en la casa.**

_____ fija de la cocina

_____ bloques

_____ libros

_____ muñecas

_____ teléfono del juego

_____ crayones

_____ fija del la casa

_____ juegetes mecánicos o pop-u p

_____ aminales del juego (dinosaurs, perros, etc.

_____ compaginador de la dimensión de una variable

_____ alimento del juego

_____ rompe cabezas

_____ vehículos (autobuses, coches)

_____ marionetas

_____ caja registradora

_____ fija de la granja

_____ camera del juego

_____ granos grandes de plástico

Para estar completado por el padre:

Notas:_____

_____

_____

_____

Appendix B1

PLAY-BASED ASSESSMENT INFORMATION SHEET

Parent's Name: _____ Phone: _____

Child's Name: _____

Child's Date of Birth _____

Child's Gender: _____ Male _____ Female

Child's Birth Order:

_____ First Born _____ Third Born

_____ Second Born _____ Fourth Born or More

Number of Siblings:

_____ Brothers _____ Sisters

Does your child have any known or suspected developmental delays, health problems, or behavioral problems? _____ Yes _____ No

If "Yes", please describe:

_____

_____

_____

Appendix B2

HOJA DE LA INFORMACIÓN DE LA EVALUACIÓN DE JUEGO-PLAY-BASED.

Nombre del padre: _____ Teléfono:_____

Nombre del Niño: _____

Fecha de naciniento:_____

Género del niño: _____ masculine _____ femenino

Raza del niño: _____ Caucasion _____ Africano

_____ Hispanic _____ Asiático

Orden del nacimiento:

_____ primer nacido _____ tercero

_____ segundo _____ cuarto

Numero de hermanos: _____ hermanos _____ hermanas

Tiene su niño los retardos de degarollo sabidos o sospechados, los problemas de salud, o los problemas del comportabmiento?

_____ Sí _____ No

Si "sí", describe porfavor:

_____

_____

_____

_____

Appendix C

Play-Based Assessment: Cognitive Development

A. Early Object Use (absence of pretend play)

1. Mouthing (e.g., sucks block)
2. Simple manipulation (e.g., holds object and visually examines it, bangs object
3. Unitary functional activity (e.g., shakes rattle, rolls ball, opens doors, presses buttons, turns wheel on car)
4. Inappropriate combinatorial (i.e., random combinations of objects and functions) (e.g., put toy dish on car)
5. Appropriate combinatorial/Complex exploration (e.g. moving objects in and out of containers, puts all animals in barn)
6. Transitional play (i.e., approximation of pretend play without confirmatory evidence)

B. Symbolic and Representational Skills

a. Decentration

1. Self-directed acts (e.g., child eats from an empty spoon, combs his/her hair)
2. Passive other-directed acts (acting on another person or lifelike object with a toy) (e.g., child feeds a doll, grooms a dog)
3. Object-directed acts (child acts on or with inanimate objects) (e.g., child pours from a pitcher to a cup, arranges bedclothes)
4. Active other-directed acts (action is attributed to animate or lifelike objects) (e.g., child makes a doll drive a car, makes a doll shovel sand)

b. Decontextualization

1. Substitutive acts (i.e., external object is used for a purpose not normally associated

with that object) (e.g., child uses a spoon as a comb, uses a Lego block to iron a sheet)

2. Inventive acts (i.e., a pretend element has been created in the absence of a real object) (e.g., pretending to twirl and throw a nonexistent baton)

c. Integration

1. Single-scheme combination (i.e., the same play behavior with the same toy is directed toward two or more different objects/people or same play behavior with different toys on one object/person) (e.g., child puts an empty cup to a doll's mouth, then to the mouth of experimenter and self or child pretends to eat a sandwich, then a cookie then a carrot)
2. Multischeme combinations: short sequences (i.e., two or three different play behaviors appear in a logical order) (e.g., child pours juice into a cup and gives a doll a drink from the cup)
3. Events (i.e., four or five play behaviors are combined in a logical order) (e.g., child stirs the pot, feeds a doll, takes off the doll's clothes and puts it to bed)
4. Episodes (i.e., six or more play behaviors are combined in a logical order) (e.g., child combs a doll's hair, looks for a mirror, keeps it in front of the doll's face. Child puts clothes on the doll, makes it sit down at a table, makes tea and offers some to the doll)

C. Imitation Skills

a. Immediate (child imitates behavior directly following modeling of adult, prior to engaging in any other behavior)

1. Imitates sounds
2. Imitates body movements and gestures
3. Imitates 1-step actions with toys

4. Imitates 2 + step actions with toys

5. Adds to or alters imitation of model

b. Delayed (child imitates previously modeled behavior after engaging in other behaviors)

1. Imitates sounds

2. Imitates body movements and gestures

3. Imitates 1-step actions with toys

4. Imitates 2 + step actions with toys

5. Adds to or alters imitation of model

D. Problem-Solving Skills and Planning

1. Searches for object after seeing it disappear

2. Repeats behavior in order to repeat an initially accidental consequence

3. Performs a behavior in order to produce an anticipated result

4. Attempts to use an adult to achieve a goal (with or without success)

5. Makes a single attempt to activate mechanical toy or achieve goal, unsuccessfully

6. Uses nonsystematic trial-and-error problem-solving without systematically changing behavior

7. Uses an object of toy to obtain an object

8. Uses systematic trial-and-error problem-solving (e.g., alters behavior in an attempt to solve problems)

9. Successfully operates a mechanical toys on first attempt and attempts thereafter (e.g., gumball machine, Disney pop-up toy)

10. Puts small objects into little openings (the size of a golf ball or smaller)

11. Solves problems by logically relating one experience to another (child states that present situation is like a previously experienced situation)
12. Uses blocks to build complex structure (minimum of nine pieces)

E. Discrimination/Classification Skills

1. Inappropriate combinations of objects (e.g., put toy dish on car)
2. Combines two objects based on perceptual similarities (i.e., color, shape, or size)
3. Combines two objects based on thematic relationship (e.g., carrot and bunny, spatula and pan)
4. Combines three or more objects based on perceptual similarities (i.e., color, shape, or size) (e.g., stack toy plates)
5. Can identify objects and parts that go together
6. Completes one or more pieces of nested puzzle
7. Nests four or more containers
8. Places circle into a puzzle or shape sorter on first attempt
9. Places square into a puzzle or shape sorter on first attempt
10. Places triangle into a puzzle or shape sorter on first attempt
11. Combines objects that have the same function (e.g., spoon and fork)
12. Sorts three or more objects by one criterion (e.g., shape or color)
13. Sorts objects by size (i.e., small, medium, large)
14. Sorts a group of objects by more than one criterion simultaneously (e.g., shape and color)
15. Classifies objects (e.g., vehicles, animals, etc.)
16. Accurately identifies three or more colors by name

17. Identifies their own left and right hands or feet

18. Puts together complex puzzle (i.e., non-nested)

19. Identifies nonmembers of a group

F. One-to-One Correspondence

1. Counts to five (i.e., "one" "two" "three" "four" "five")

2. Accurately uses or comprehends "one" (e.g., "hand me one" "I need one block")

3. Counts up to three objects, pointing at each object in turn

4. Counts up to five objects, pointing at each object in turn

5. Counts up to ten objects, pointing at each object in turn without omitting any

6. Accurately uses or comprehends "more"

7. Accurately uses or comprehends "same"

8. Accurately uses or comprehends "less"

9. Recognizes and labels numbers zero through nine

10. Accurately uses or comprehends "zero" or "none"

G. Drawing Skills

1. Scribbles

2. Copies or imitates vertical stroke

3. Copies or imitates horizontal lines

4. Copies or imitates circular strokes

5. Copies or imitates drawing of a face

6. Copies or imitates cross

7. Draws lines and arcs spontaneously

8. Draws unrecognizable forms and/or shapes (not just lines/arcs) spontaneously

9. Draws circle spontaneously

10. Draws simple face of a person including minimum of head, eyes, and mouth

11. Draws identifiable objects without model spontaneously

12. Draws stick figure

13. Draws person with trunk and arms

14. Copies or imitates square

15. Copies or imitates triangle

16. Copies or imitates diamond

17. Copies or imitates V strokes and diagonal lines

18. Copies or imitates own name (large, irregular letters are acceptable)

19. Copies or imitates numbers (large, irregular print is acceptable)

20. Copies or imitates rectangle

21. Copies or imitates letters

H. Sequencing Abilities

1. Accurately uses and/or comprehends "big"

2. Accurately uses and/or comprehends "little"

3. Correctly answers questions about what is going to happen next

4. Accurately uses and/or comprehends "tall"

5. Accurately uses and/or comprehends "short"

6. Accurately uses and/or comprehends superlatives (e.g., tallest)

7. Puts three objects of graduated sizes in order

8. Accurately uses and/or comprehends "first"

9. Accurately uses and/or comprehends "middle"

10. Accurately uses and/or comprehends "last"

11. Places four or more objects of graduated sizes in order

I. Nonplay Behaviors

1. Unoccupied: child exhibits behavior with lack of goal or focus

2. Transition: child moves from one activity to another or prepares for, sets out, or tidies up on activity, dumps toys out of container

3. Conversation: child actively listens or communicates verbally in the absence of play

4. Aggression: child expresses displeasure, anger, or disapproval through physical means

5. Rough and Tumble: child is engaged in playful physical activity

6. Wandering: child meanders aimlessly about the center

Appendix D1

Permission form is reviewed by the session facilitator(SF) and the parent will be given the opportunity to ask questions: "Before we start the play session I need to go through this permission form with you and have you sign it if you are still interested in participating (go through each paragraph on the permission form). Do you have any questions? If you would like to participate in this study, please sign your name here. Write your child's name here (take the permission form from the parent). Would you like a copy of this form to take home with you? (if parent says yes, give him/her the blank copy from the SF clipboard).

SF will explain what will happen in the play session stressting that we are interested in seeing what children play with and how they play on their own. "Now, I'd like to tell you what will happen in the play session. We will go next door where we have a lot of toys in the room. We would like you to tell {child's name} to 'go play with the toys.' I will sit on the floor with {child's name}. It is very important that you do not encourage your child to play with any specific toys or ask him/her to do anything in particular with the toys. We are interested in seeing what your child chooses to play with on his/her own, without adult direction. I will be close by so if your child wants to have me play with him/her, I can play along. All of the play, however, will be directed by the child. You will be in the room the entire time but we will have you busy completing these information sheets while your child is playing. There may be times in the session that we will need to have you tell us what your child is saying. Otherwise, it's important that you complete the forms and your child plays with the toys. We're finding that children are having a lot of fun playing with the toys. We'll have {child's name} play for about 30-40 minutes and

then we'll set out a snack. I will be happy to answer any of your questions during the session. Do you have any questions before we go next door to the play room? Just a reminder that we will be videotaping the session. I will introduce you to the camera operator when we enter the room. SF says to the child "Are you ready to go play? Let's go! Mommy's coming too.

Appendix D2

Permission form is reviewed by the session facilitator (SF) and the parent will be given the opportunity to ask questions: "Antes de que comencemos la sesión del juego o mecesite pasar a trav´es de esta forma del permiso con usted y hacer que usted la firme si usted es interestedin inmóvil que participa. (go through each paragraph on the permission form) Usted tiene preguntas? Si usted quisiera participar en este estudio, firme por favor su nombre aquí. Escriba el nombre de su niño aquí. (take permission form from parent). Le gustaría usted una copia de esta forma para tomar a casa con usted? (If parent says yes, give him/her the blank copy from SF clipboard.)

SF will explain what will happen in the play session, stressing that we are interested in seeing what children play with and how they play on their own. "Ahora quisiera decirle qué sucederá en la sesión del juego. Iremos wher siguiente de la puerta que tenemos muchos de juguetes en el cuarto. Quisiéramos que usted dijera (child's name) vamos el juego con los juguetes." (SF name) sentará en el suelo con (child's name). Es muy importante que usted no anima (child's name) para jugar con ninguna juguetes específica o para pedir él/ella para hacer cualquier cosa en detalle con los juguetes. Estamos interesados en ver lo qu (child's name) elegirá en su el propio, sin la dirección del adulto. (SF name) sea cerca tan si (child's name) desea tener juego (SF name) con him/her, (SF name) puede jugar adelante. Todo el juego, sin embargo, será dirigido cera (child's name). Usted será en el cuarto el tiempo entero pero le tendremos ocupado terminando estas listas de comprobación mientras que (child's name) está jugando. Puede haber éspocas en la sesión que necesitaremos para hacer que usted nos diga lo que está diciendo su niño. Si no, es importante que usted termina las formas y (child's name) juegos con los

juguetes. Estamos encontrando que los niños están teniendo muchos de divsersión el jugar con los juguetes. Tendremos (child's name) juego por 30-40 minutos y entonces precisaremos un bocado. Me placeré contestar a cualesquiera de sus preguntas durante la sesión. Usted tiene preguntas antes de que vayamos puerta siguiente al cuarto del juego? (answer all questions). Un recordatorio que vamos a graber por video la sesión. Le introducirá (camera operator's name) cuando entramos en el cuarto.

SF says to the child, "Estás listo ir juego? Vayamos! Mommy que viene también.