

ASSESSING FIRST AND SECOND LANGUAGE DEVELOPMENT IN AN ENGLISH AS A SECOND LANGUAGE CLASSROOM

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1. Introduction

As the world becomes increasingly interdependent and as international communication becomes a daily occurrence in government, business, commerce, and family life, multilingual skills constitute an important national resource which deserves protection and development.

(Improving America's Schools Act, 1994, Section 7102(a)(10) as cited in August & Hakuta, 1997)

Along with the rest of the world, the American society is becoming increasingly multilingual in nature. Immigration has reached its highest percentage point in the last five years, and is currently the highest in U.S. history. As recently as the early 1980s, only 13.3 percent of all U.S. children aged 5 to 14 were from families in which the primary language spoken was not English. This segment of the school-age population is increasing rapidly. Projections forecast that by 2026, 25 percent of all students will come from homes in which the primary language is not English (Slavin, 2000). These demographic changes in the composition of the U.S. population have led to consequent changes in the configuration and structure of school programs across the nation. Language minority students are currently the fastest growing segment of student population in the United States (National Center for Education Statistics, 2001). Thus, school personnel are now faced with the important task of educating and assessing a multicultural and multilingual student population.

So far, American education has focused primarily on the needs of native English-speaking children. However, a large and growing number of students in U.S. schools come from homes where the language background is other than English, and are considered to be Limited-English-Proficient (LEP). According to the 2000 U.S. census, 38 percent of public school students are considered to be part of a minority group. By far the largest proportion of English-language learners is a native speaker of Spanish

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(National Center for Education Statistics, 2001). This is followed by Vietnamese, Hmong, Cantonese, Cambodian, Korean, Laotian, Navajo, Tagalog, Russian, French Creole, Arabic, Portuguese, Japanese, Armenian, Chinese, Mandarin, Farsi, Hindi, and Polish. Over half of the English-language learners' population (53 percent) can be found in grades K-4. In fact, until recently, they made up 8 percent of all kindergartners (August & Hakuta, 1997). This large group of non-native English speaking children is expected to integrate in the American culture and achieve the educational standards that the rest of the student population achieves. In order for these children to be able to perform appropriately and succeed, both in their own language community and in their school community, they need to equally develop their first-and second-language. Such a bilingual profile will pave the way for them to become successful students and be proficient in their two languages (August & Hakuta, 1997).

Maintaining the native language is instrumental in achieving the goal of becoming bilingual, as it fosters close ties within the family and native culture and develops children that are proficient in two languages. All definitions of bilingualism stress the importance of proficiency in both languages, the ability to communicate effectively and produce complete meaningful utterances in both languages (Romaine, 1995; Valdes & Figueroa, 1994). The effects of lack of success in maintaining the native language and attaining bilingualism may be catastrophic, ranging from loss of educational and future opportunities to problems of rootlessness and alienation (Skutnabb-Kangas, 1984, in Hoffman, 1991). In order for language minority students to achieve language proficiency they will need to acquire vocabulary knowledge, since it is a highly reliable correlate of later reading ability, and thus language knowledge (Stanovich, 1986). Several researchers have reported the importance of vocabulary size as an essential prerequisite to the development of skill in language use. As skill in language use develops, this skill enables a growth in knowledge of the world through the skillful use of language. For this knowledge to increase and broaden there must be accompanying vocabulary growth (Nation, 1993; Laufer, 1992, in Nation, 1993). A limited number of studies have sought relationships between vocabulary knowledge and reading for English-language learners (Fitzgerald, 1995). In a study by Ammon (1987), thirty-six Hispanic and sixty-four Cantonese third and fifth grade students were given language tests. The results showed that unknown vocabulary on the tests was a main linguistic factor that adversely affected the students' reading performance.

In the case of non-English-speaking and limited-English-speaking children in the United States, schools are assessing the language proficiency of children in order to determine whether children know enough English to profit from English-only instruction. Other purposes of this assessment include the determination of eligibility for placement in specific language programs (e.g., bilingual education or English as a second language [ESL]), and monitoring of progress in and readiness to exit from special language service programs. According to four recent surveys, state and local districts use a variety of assessment methods which include home language surveys, observations, interviews, referrals, grades, and classroom performance and testing (August & Lara, 1996; Cheung *et al.*, 1994; Fleischman & Hopstock, 1993; Rivera, 1995, cited in August & Hakuta, 1997). Administration of language proficiency tests in English was found to be the most common method (Fleischman & Hopstock, 1993, cited in August & Hakuta, 1997).

Several instruments have been developed to measure language proficiency, including the Language Assessment Scales (LAS), the Basic Inventory of Natural Language (BINL), and the Bilingual Syntax Measure (BSM). These tests emphasize measurement of a limited range of grammatical and structural skills. The measures used at schools today have been designed either for native speakers or language learners. Procedures and instruments to assess the overall proficiency in one or the other of a bilingual's two languages have not been developed for use with circumstantial bilinguals. Thus, their assessment is complicated by the fact that it is never entirely clear whether circumstantial bilinguals should be tested using instruments intended for native speakers of the language or for language learners (August & Hakuta, 1997).

Garcia (1991) found that the English reading test performance of Spanish-speaking Hispanic students was adversely affected by their unfamiliarity with vocabulary terms used in the test questions and answer choices. In fact, interview data demonstrate that the presence of unknown vocabulary in the questions and answer choices was the major linguistic factor that adversely affected the Hispanic children's reading performance (Garcia, 1991). These research findings suggest that test bias is present in such assessments. The potential causes of bias are (a) language-dependent skills and, (b) some situational or cultural contexts in the assessments that are unfamiliar to students from certain cultures (Farr, Garcia-Sims, Garcia Fontana, 1997). Given that the English proficiency level of students affects their performance on

assessments administered in English, an alternative method of assessing has been the use of native-language assessments. Achievement tests in other languages are available and with Hispanic children the Spanish versions of many tests are widely used in educational settings. Most of these have been standardized and normed abroad and assume that the monolingual educational and sociocultural experiences in Mexico, Latin America, or Spain are comparable to those in the United States. Valid tests in the ethnic language are relevant for children in the United States if the educational experiences of the norming samples are congruent with curricula in the United States (Valdes & Figueroa, 1994). McLaughlin, Blanchard & Osanai (1995), have called for a special set of guidelines to be used in assessing bilingual preschool children. These guidelines include developmental and cultural appropriateness, awareness of the child's linguistic background, an approach that allows children to demonstrate what they can do, and finally, involvement of parents and family members, teachers, and staff, as well as the child. Royer & Carlo (1991), suggested that educational programs that serve English-language learners need instruments that have finer sensitivity, in order to help educators recognize the small gains in linguistic competency.

Currently, English Language Learners attend several types of educational programs with most prevalent being the English as a Second Language (ESL) and transitional bilingual education (Fleischman & Hopstock, 1993). English as a second language (ESL) is a program where students receive specified periods of instruction aimed at the development of English-language skills, with a primary focus on grammar, vocabulary, and communication rather than academic content areas, whereas in the transitional bilingual education program, students receive some degree of instruction through their native language, although the goal of the program is to transfer to English as rapidly as possible. Another type of bilingual education is the two-way bilingual program, where about half of the students are native speakers of English, and the other half are English language learners from the same language group. The goal of this program is to develop proficiency in both languages for both groups of students.

In spite of the fact that the Improving America's Schools Act clearly states the instrumental role of bilingualism in our society today, only a small number of children whose native language is other than English are currently receiving a two-way bilingual education. Presently in the United States, the actual number of children who receive bilingual education represents only a quarter of the population for whom it is intended

(August & Hakuta, 1997). Moreover, children from culturally and linguistically diverse backgrounds comprise a large percentage of public school students. Most of these public schools do not attempt to maintain the native language of the children and over half do not provide any content area instruction in the native language (Romaine, 1995). Additionally, the assessment methods that schools use are usually inappropriate for children from different linguistic and cultural backgrounds. The academic assessment of bilingual school-age students poses certain difficulties, especially when standardized achievement tests are used. Bilingual students tend to receive lower test scores that often are interpreted as evidence of deficits or even disorders (Duran, 1989). Moreover, the assessment of young second-language learners poses unique difficulties on the assessment personnel. Monolingual as well as bilingual young children are difficult subjects to assess accurately because of their activity level and distractibility, shorter attention span, wariness of strangers, and inconsistent performance in unfamiliar environments. Other factors that may affect a child's performance include cultural differences and language barriers, parents not having books to read to their child and a child's lack of interaction with other children. Consequently, assessment of infants, toddlers, and young children requires sensitivity to the child's background, and knowledge of testing limitations and procedures with young children (Vacc & Ritter, 1995; Meisels, 1994). For the assessment of this population we need tools that are authentic, natural, and sensitive to gradual individual development. The characteristics and capabilities of the Individual Growth and Development Indicators, specifically the Picture Naming, appear to lend themselves to these situations. For the last six years, the Early Childhood Research Institute of Measuring Growth and Development (ECRI-MGD) at the University of Minnesota, a federally funded research program, in collaboration with researchers at Oregon and Kansas Universities, is developing effective and efficient systems for evaluating and tracking the developmental status of young children, including children with disabilities, on both an individual and group-level basis, which in turn facilitates ongoing examination and improvement of programs or other services for the young children (Early Childhood Research Institute on Measuring Growth and Development, Technical Report # 1, 1998).

This effort results in the development of continuous progress measures, the Individual Growth and Development Indicators, which rely on naturalistic child behaviors, can be sensitive to growth over time, are standardized, inexpensive and easy

to administer. The Individual Growth and Development Indicators were developed based on the conceptual foundation of curriculum-based measurement. Curriculum-based measurement (CBM) is a set of standardized; simple fluency probes in several areas of student performance (Deno, 1985; Deno, 1986; Shinn & Bamonto, 1998). Over the past fifteen years, several studies have been conducted in order to document the reliability and validity of several curriculum-based measures, as well as their application, and interpretation, both alone and as part of instructional planning and program evaluation efforts (Fuchs & Fuchs, 1986; Fuchs, Fuchs & Hamlett, 1994; Good & Shinn, 1990; Marston, Fuchs & Deno, 1986; Kaminski & Good, 1998; Shinn, Collins & Gallagher, 1998; Baker, Plasencia-Peinado & Lezcano-Lytle, 1998). Baker and colleagues reported their findings of research using CBM reading measures, in a problem-solving model, with school-age students with limited English language proficiency. They found that CBM is reliable and valid in identifying students who perform below their expected level. The researchers concluded CBM reading measures could be used to monitor the effectiveness of English and native-language reading programs, such as Spanish, to help shape the development and validation of instructional programs that meet the literacy needs of language-minority students. Since most of the second-language research has focused on school-age students, more research has to be conducted with language-minority students at the kindergarten level. We need to develop effective and efficient systems for evaluating and tracking the developmental status of young language-minority children in order for them to be able to perform appropriately and succeed in their school community as well as in their own language community. Along the previous line of proposed research, the purpose of this research study was to explore the usefulness of a specific Individual Growth and Development Indicator (IGDI), the Picture Naming Task, with young English Language Learners. Similar to other IGDI, the Picture Naming IGDI relies on naturalistic child behaviors, can be sensitive to growth over time, standardized, inexpensive and easy to administer. Considering the rich diversity within the world of the English Language Learners, all these properties seem suitable for use with this unique student population. This study investigated the effectiveness of the Picture Naming IGDI in identifying group differences and indicating first-and second-language growth on this measure over the period of data collection, while addressing four research questions:

a. Can we use the Picture Naming Individual Growth and Development Indicator to detect differences in first-and second-language development of young English Language Learners?

b. Can we use the Picture Naming Individual Growth and Development Indicator to detect differences between the groups of English Language Learners and Native-English Speakers in their expressive English language skills?

c. Is there a significant relationship between the English Picture Naming IGDI and the Peabody Picture Vocabulary Test-Revised (PPVT-III)?

d. Is the Picture Naming IGDI sensitive to all children's growth in expressive language skills?

2. Method

2.1. Participants

A total of 42 children participated in this study. Twenty-nine attended an English Language Development Kindergarten Program and thirteen attended two typical kindergarten classrooms in a midwestern elementary school. The children who attended the English Language Development Program were labeled as English Language Learners (ELL), meaning that they were beginning to learn English as their second language. The children who attended the typical kindergarten program were children with typical language development who spoke English as a first language. The mean age of the participants at the first week of data collection was 72 months ($SD=3.77$, Range=66.5-79.3). In the English Language Learners group, there were 17 girls and 12 boys, and in the Typical Kindergarten/Native English Speakers group there were 10 girls and 3 boys. In the ELL group, there were children who spoke several languages at home, such as Hmong ($n=25$), Cambodian ($n=1$) and Spanish ($n=3$). Twenty-nine of the forty-two participants in this study were members of the Hmong community in a Midwestern area. The Hmong community is a part of the greater Southeast Asian refugee community, which has been immigrating to the United States for the last 25 years. The Hmong participants in this study lived in families in which adults had little or no formal schooling and few vocational skills, and received public assistance. Most of the English-speaking kindergartners also lived in families that received public assistance. Finally, most of the participants in the English Language Learners group spoke Hmong as their first language. The participants were separated into three groups: Native English Speakers ($n=13$) who spoke English at home and attended typical Kindergarten classrooms, and English Language Learners (ELL) ($n=29$) who spoke

languages other than English at home and attended an English Language Development Program, an intensive language development program for English Language Learners (ELL), formerly labeled as English as Second Language students (ESL), and Hmong Speakers (n=25), a subset of the ELL who spoke Hmong at home.

2.2. Measures

Five measures were employed in this study: (a) the Picture Naming Individual Growth and Development Indicator in English; (b) the Picture Naming Individual Growth and Development Indicator in Hmong; (c) the Hmong Language Knowledge Rating Form; and (d) a standardized language assessment.

Picture Naming Individual Growth and Development Indicator. The Picture Naming IGDI task is adapted from Kaminski and Good's (1996) earlier work on dynamic indicators of early literacy skills. The Early Childhood Research Institute on Measuring Growth and Development (ECRI-MGD) research team had previously developed a series of one hundred-sixteen color photographs of common objects for use with native English speaking students. For this study, the ELL classroom Hmong Educational Assistant and the author adopted the color photograph series previously developed by the (ECRI-MGD) research so that they are not culturally biased for the language-minority students in this study. From the previously developed one hundred-sixteen pictures, only eighty-nine were judged to be familiar to members of cultures other than the mainstream-American culture. These photographs included those that depicted common objects found in students' homes and classrooms, body parts and objects in the environment. The same series of pictures was used for both the native English-speaking students and the language-minority students in this study. For this measure, the examiner briefly described and demonstrated the Picture-Naming task for the child, and then presented pictures one at a time, recording correct and incorrect responses, and presenting a new stimulus after every child response or five seconds of non-response. For the Picture Naming task scores included the total number of pictures named correctly in a one-minute sample.

Standardized Language Assessment. The Peabody Picture Vocabulary Test, Revised (PPVT-III) (Dunn & Dunn, 1997) was administered to all participants. The PPVT-III is a norm-referenced test of listening comprehension for the spoken word in Standard English. It is designed as a measure of an examinee's receptive (hearing)

vocabulary. In this sense, it is an achievement test of the level of a person's vocabulary acquisition. The PPVT-III is extremely useful in testing preschool children where vocabulary acquisition is so important as an indicator of a child's linguistic and cognitive development. For persons for who English is a second language, the PPVT-III provides a measure of English language proficiency. The PPVT-III is an individually administered, untimed, wide-range test that contains four training items and 204 test items grouped into 17 sets of 12 items each. The item sets are arranged in order of difficulty. Each item consists of four black-and-white illustrations arranged on a page. The task of the test taker is to select the picture that best represents the meaning of the stimulus word presented orally by the examiner. Most of the scoring, which is rapid and objective, is accomplished while the test is being administered.

2.3. Procedures

All participants were scheduled for thirteen separate observations, with a week between observations, for both the English and Hmong Picture Naming. The English Picture Naming was given to all participants, while the Hmong Picture Naming was given only to the Hmong participants. The period of time between the rounds of data collection for each subject remained constant across children. In addition, the standardized language assessment was administered to all participants at the end of the study.

Picture Naming Individual Growth and Development Indicator. The Picture Naming was administered to all children, once a week for three months, by the author, while a Hmong Educational Assistant, who worked at the children's classrooms and spoke the children's native language, administered the task in Hmong. The Picture Naming was administered to children in a space adjoining or nearby the classroom, away from teachers and peers. Also, the two measures, the Picture Naming in English and the Picture Naming in Hmong were administered on separate days of the week to avoid any order-effects.

Fidelity of Implementation for the Picture Naming task. In order to assure procedural reliability, Fidelity of Administration Checklists were completed by the author while observing the examiner administering the Picture Naming task to three children individually. The inter-observer reliability rates that were generated were 92, 95, and 100 percent, respectively. To evaluate fidelity of implementation throughout the

project, a trained graduate assistant observed the author administering the Picture Naming task in English for 118 observations (25% of the total administrations). Mean inter-observer agreement equaled 99.5% ($SD = .95$, Range=95%-100%). A similar procedure was followed for the fidelity of implementation for the Picture naming task in Hmong ($n=50$, $M=99.3\%$, $SD=1.2$, Range=94%-100%).

Standardized language assessment. The PPVT-III was administered and scored by the author to all students in English at the end of the study. Each protocol was re-scored by an assistant who didn't administer it.

2.4. Data analysis

Several data analysis procedures were employed to address this study's research questions regarding: (a) the discriminative validity of the Picture Naming Individual Growth and Development Indicator (IGDI); (b) the concurrent validity of the Picture Naming Individual Growth and Development Indicator (IGDI); and (c) sensitivity to growth over time of the same measure.

Discriminative validity. The first two research questions asked if we could use the Picture Naming IGDI to detect significant differences in first-and second-language performance of the English Language Learners group, as well as to detect differences in performance between the two groups of children, the English Language Learners and the native English-speaking students on the Picture Naming in English. For these questions, a one-way Analysis of Variance (ANOVA) was computed to analyze differences between two groups on one dependent variable, in this case on the children's Picture Naming scores in English and in Hmong. An additional one-way ANOVA was computed to determine differences between the two groups of children, the English Language Learners and the native English-speaking students on the Picture Naming in English.

Concurrent validity. The third research question asked whether there were significant relationships between the Picture Naming IGDI in English and the Peabody Picture Vocabulary Test-Revised (PPVT). For this question, correlational analysis was employed to study the concurrent validity between the Picture Naming and the standardized test of language assessment (PPVT).

Sensitivity to growth over time. The last research question asked if the Picture Naming IGDI is a sensitive tool to measure growth in first-and second-language development of young children. To assess the sensitivity of the Picture Naming IGDI to children's growth in English and in Hmong over time, the statistical technique of Hierarchical Linear Modeling (HLM) was employed (Bryk & Raudenbush, 1987; Bryk & Raudenbush, 1992; Burchinal, Bailey & Snyder, 1994; Hatton, Bailey, Burchinal & Ferrell, 1997; Burchinal, Roberts, Riggins, Zeisel, Neebe & Bryant, 2000).

Hierarchical Linear Modeling is a technique that provides estimates of linear equations that explain outcomes for group members as a function of the characteristics of the group as well as the characteristics of the members. This method of analysis allows researchers to study individual child growth nested within repeated observations of the same individuals, as well as nested within groups (Bryk & Raudenbush, 1992). It can explain achievement and growth as a function of school level and classroom level characteristics while taking into account the variance of student outcomes within schools or classrooms. It can model the between and within group variance at the same time and thus produce more accurate estimates of student outcomes. Hierarchical Linear Modeling is extremely flexible because individual patterns of growth are presented as the phenomena of interest and inconsistently timed data can be analyzed, despite differing numbers of observations per individual and varying periods of time between observations (Bryk & Raudenbush, 1992; Burchinal, Bailey & Snyder, 1994). For this study, HLM offered two advantages: (a) individual and population curves could be estimated to describe individual and prototypic patterns of first-and second-language development over time, and (b) children with inconsistently timed data could be included. Separate individual growth curves were estimated to describe each child's developmental patterns, allowing the intercepts and slopes to vary among children. The group curves were estimated from fixed-effect predictors. The child's educational program was represented by two groups, the English Language Development Program and the Typical Kindergarten. The analysis model for estimation of individual growth curves for English and Hmong Picture Naming (i.e., Level-1) was $Y_{it} = \pi_{0i} + \pi_{1i}(\text{Week})_{it} + e_{it}$, where Y_{it} was the score for child i at time t ; π_{0i} was the estimated intercept for child i at week one of data collection; π_{1i} was the estimated rate of increase per week for child i ; (Week) was the week of data collection for child i ; and e_{it} was the random within-subject error for child i at time t (Bryk & Raudenbush, 1992).

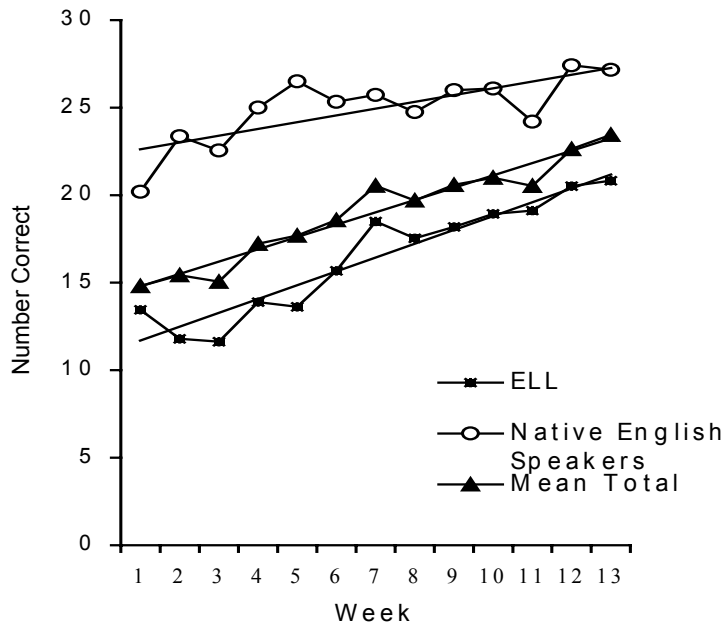
3. Results

The results of this study will be presented in the following order: (a) descriptive statistics from the English and Hmong Picture Naming IGDI data across all weeks and the standardized language assessment (PPVT-III); (b) discriminative validity of the English and Hmong Picture Naming IGDI; (c) concurrent validity of the same measures; and (d) sensitivity of the Picture Naming to first-and second-language growth over time.

3.1. Descriptive statistics

Picture Naming in English. The descriptive data for performance on the English Picture Naming task are presented in Table I. Specifically it shows means, standard deviations and range of the total number of pictures named correctly per minute in English for all children across all weeks of data collection. Figure I presents a graphic representation of all children’s growth curve on the English Picture Naming Task.

Figure I. Participants’ Growth Curves: English Picture Naming Across Weeks.



Picture Naming in Hmong. Table I shows descriptive statistics of Hmong Picture Naming scores across all weeks. It shows means, standard deviations and range

of the total number of pictures named correctly per minute in Hmong for the English Language Learners whose native language was Hmong.

Standardized Language Assessment. Table I shows descriptive statistics of scores from the administration of the PPVT-III (Dunn & Dunn, 1997). Testing mean differences, native-English speaking students who attended the typical kindergarten program scored significantly higher than the English Language Learners who attended the English Language Development program on PPVT raw scores, $t(38) = -6.12$, $p < .001$.

Table I. Means, Standard Deviations and Range of All Participants and By Group Across All Weeks on English and Hmong Picture Naming (Number of Pictures Named Correctly) and PPVT-III Standard and Raw Scores.

English Picture Naming	n	M	SD	Range
All children	42	19.1	4.9	11.8-29.3
Native English Speakers	13	25.2	2.8	18.5-29.3
English Language Learners	29	16.4	2.9	11.8-21.3
Hmong Speakers	23	16.	3.0	11.8-21.3
		1		
Hmong Picture Naming				
Hmong Speakers	23	8.3	2.9	3.2-13.5
PPVT-III Standard Scores				
All children	40	81.9	18.3	53.0-118.0
Native English Speakers	12	100.7	16.0	64.0-118.0
English Language Learners	28	73.8	12.3	53.0-106.0
Hmong Speakers	23	73.2	11.2	53.0-96.0
PPVT-III Raw Scores				
All children	40	61.0	21.6	32.0-109.0
Native English Speakers	12	84.0	19.1	44.0-109.0
English Language Learners	28	51.1	13.8	32.0-88.0
Hmong Speakers	23	49.6	12.3	32.0-78.0

3.2. Discriminative Validity

The first two research questions asked if we can we use the Picture Naming Individual Growth and Development Indicator to detect differences between the groups of English Language Learners and Native-English Speakers in their expressive English language skills as well as to detect differences in first-and second-language development of young English Language Learners. An one-way ANOVA was

computed to detect differences in English Picture Naming scores across all weeks of data collection. Results indicated that the English Picture Naming discriminated as equally well between Native English Speakers and English Language Learners as the PPVT-III ($\bar{F}(40) = 78.86$, $p < .001$, and $\bar{F}(38) = 37.48$, $p < .001$, respectively). A paired samples test for the mean difference between Mean English Picture Naming IGDI Performance and Mean Hmong Picture Naming IGDI Performance across all weeks of data collection was also computed. Results indicated that ELL students who spoke Hmong as their first language performed significantly better on the English Picture Naming than they did on the Hmong Picture Naming, $t(22) = 9.73$, $p < .001$.

3.3. Concurrent Validity

The third research question asked if there are significant relationships between the English Picture Naming IGDI and the Peabody Picture Vocabulary Test-Revised (PPVT-III).

Standardized Language Assessment. A correlation coefficient was calculated using Pearson Product Moment comparing mean English Picture Naming scores over the thirteen-week period with the PPVT-III raw scores. The correlation between PPVT-III raw scores and the mean performance of all children on the English Picture Naming appeared quite strong, $r = .78$, $p < .01$. This coefficient demonstrates a significant relationship between the Picture Naming IGDI in English and the PPVT-III raw scores for all the students that participated in this study.

3.4. Sensitivity of the Picture Naming IGDI to Growth Over Time

The final question asked if the Picture Naming IGDI is sensitive to all children's growth in expressive language skills.

Picture Naming IGDI in English. Hierarchical Linear Modeling (HLM) (Bryk & Raudenbush, 1987; Bryk & Raudenbush, 1992; Burchinal *et al.*, 1994; Hatton *et al.*, 1997) was used to evaluate the sensitivity of the Picture Naming in English to the growth of English Language Learners and Native English Speakers over time. Data from the 42 children whom we observed on thirteen occasions, including 29 English language Learners and 13 Native English Speakers, were analyzed. The intercepts of the English Picture Naming, that is the estimated performance at the first week of data collection, and slopes, that is the rate of change per week, significantly differed from

zero and the variance estimate around the mean intercept across participants was quite significant (Intercept = 14.97, Slope = .71, SD = 1.00). In addition, the reliability coefficient of the intercept estimate was quite high ($r = .86$, $p < .01$).

Picture Naming IGDI in Hmong. Hierarchical Linear Modeling (HLM) was used to evaluate the sensitivity of the Picture Naming in Hmong to the growth of Hmong Speakers over time. Data from the 23 children who were observed on ten occasions were analyzed. The intercepts of the Hmong Picture Naming, that is the estimated performance at the first week of data collection, and slopes, that is the rate of change per week, for the entire sample significantly differed from zero and the variance estimate around the mean intercept across participants was quite significant (Intercept = 5.06, Slope = .93, SD = .66). In addition, the reliability coefficient of the intercept estimate was moderate.

4. Discussion

The results showed that we can use the Picture Naming Individual Growth and Development Indicator to detect differences in first -and second-language development of young English Language Learners, as well as to detect differences between the groups of English Language Learners and Native-English Speakers in their expressive English language skills. For all participants, the English Picture Naming IGDI was found to be strongly associated with a well-known standardized language assessment tool, the PPVT-III, while the Hmong Picture Naming was only strongly associated with the Hmong Language Knowledge Rating Form that was completed in the beginning of the study. Additionally, results indicated that the English and Hmong Picture Naming IGDI can detect positive change over time respectively, and that they are consistent with sensitivity to growth. This conclusion is further supported by the correlation of the English Picture Naming with the PPVT and the identified differences between groups. What follows is a discussion of the results for each of the study's four research questions.

4.1. Discriminative Validity of the Picture Naming Individual Growth and Development Indicator

The Picture Naming IGDI distinguished first-from second-language performance for the English Language Learners group. Analysis of the English and Hmong Picture

Naming data revealed that the majority of the English Language Learners group, the Hmong speakers, named significantly more pictures correctly in their second language, English, than in their first language, Hmong. This finding is consistent with previous second-language research: language minority students perform better in the language in which they receive direct instruction, as in the case of Spanish elementary school students who were receiving direct English reading instruction and no direct Spanish instruction. Researchers found that the students' reading performance in English was superior to Spanish in both level of performance and rate of progress (Baker & Good, 1995, in Baker, Plasencia-Peinado & Lezcano-Lytle, 1998). The above research validates the fact that children from linguistic minorities can experience language shift, a situation that is created when they are under intense external pressure to learn the language of the majority, particularly if the language of the minority is not officially recognized. According to previous research results, in the case where little support is offered to English Language Learners, in terms of programs where first-language is taught, there is a great risk of losing their first language and failing to become bilingual (Wong-Fillmore, 1991).

In addition, the Picture Naming IGDI identified significant group differences in English language expressive skills. Analysis of the English Picture Naming data confirmed that the Native English Speakers group performed significantly better on the English Picture Naming measure than the English Language Learners group. Thus, the more proficient group in English named significantly more pictures correctly than the other language group. The fact that native English speakers were more proficient in the Picture Naming task than the English Language Learners group was not unexpected. Native English speakers had English as their first language and had been surrounded by an English-speaking environment, which transmitted all the necessary cues and rules of the English language. This finding is also consistent with second language research: the native English speakers should be performing better than the group of same-age peers who are beginning to learn English, since it takes five to seven years of learning in a language before youngsters are able to perform at the level of native speakers on standardized achievement tests (Cummins, 1991). The present study's finding extends the above research findings to the area of naturalistic assessment using the Picture Naming Individual Growth and Development Indicator to measure second-language development. In summary, Picture Naming appears to be a feasible means of

discriminating first-from second-language performance of young English language Learners, as well as a means of distinguishing between the more proficient, Native English Speakers, and less proficient groups of students, the English Language Learners.

4.2. Concurrent Validity of Measures

Based on the results, the Picture Naming IGDI appears to be as valid a measure of English language expressive skills as a well-accepted standardized language assessment, the PPVT-III, as the measures were found to be highly related. This finding is important because the PPVT-III is a measure of English language proficiency and is considered to be extremely useful in testing children where vocabulary acquisition is so important as an indicator of a child's linguistic development. This finding is also notable because the properties of the Picture Naming are even more advantageous than those of the PPVT-III. First, standardized language assessments, such as the PPVT-III, do not help educators to evaluate an individual child's developmental trajectory nor begin to fashion interventions specific to the child's needs if her trajectory fails to meet expectations. In contrast, the Picture Naming Individual Growth and Development Indicator relies on naturalistic child behaviors, can be sensitive to growth over time and can show growth in a shorter period of time than other assessment tools, is inexpensive and easy to administer (Early Childhood Research Institute on Measuring Growth and Development, Technical Report # 2, 1998). Second, the Picture Naming takes only one minute to complete, compared to the PPVT-III, which takes approximately fifteen minutes to complete. Thus, we can conclude that we can use the Picture Naming to measure English language proficiency in a valid and efficient manner.

4.3. Sensitivity of the Picture Naming to Growth Over Time

English Picture Naming. Based on results from the Hierarchical Linear Modeling analysis from all weeks of English data collection, the Picture Naming Individual Growth and Development Indicator was found to be able to detect positive change over time. All children's performance at the first time of data collection differed significantly from zero and varied significantly across individuals. Furthermore, the slope of the English Picture Naming differed significantly from zero and varied significantly across individuals. Specifically, the developmental trajectories of native English speakers differed significantly from those of English language learners.

Although the developmental level of the English language learners was lower than that of native English speakers, their development occurred at a higher rate. This finding is important because it suggests that English language learners who attend a kindergarten program that greatly focuses on English language development develop in a rate that may enable them to reach the language level of their native English speaking counterparts over a specific time frame, which has yet to be defined. In the past, academic comparisons between language-minority students and native English-speaking students have consistently documented achievement discrepancies that become more severe over time (Baker *et al.*, 1998). This study's finding that kindergartners who are beginning to learn English as their second language may start at a lower level but develop in a higher rate than their native English-speaking counterparts on the English Picture Naming reveals the importance of early language development and successful language instruction, in order to avoid future more severe developmental discrepancies.

Hmong Picture Naming. Based on results from the Hierarchical Linear Modeling analysis from all weeks of Hmong data collection, the Picture Naming Individual Growth and Development Indicator was able to detect positive change over time. Both the performance of children at the first time of data collection (i.e. intercept) and the slope of the Hmong Picture Naming across time differed significantly from zero. This is an important finding, which reveals the efficacy of the Picture Naming IGDI as a measurement tool of the development of a native language other than English. Until recently, the Picture Naming IGDI was used to measure English language development. This study extends the usefulness of the Picture Naming to measuring the development of other languages, in this case, Hmong. This finding is consistent with findings of previous researchers who used CBM reading fluency measures with Spanish-speaking elementary school students. Those researchers concluded that CBM Spanish reading fluency measures could be used to assess native language proficiency (Baker & Good, 1995; Good, Baker, Baker & Berber, 1990, in Baker, Plasencia-Peinado & Lezcano-Lytle, 1998). The present data suggest that we can use the one-minute Picture Naming IGDI with kindergarten language minority students to detect change in language development over time. However, until we have an independent and objective measure of language "growth", these findings should be viewed with caution.

5. Limitations

One limitation of this study involves the sample size of Hmong participants, as well as the sample size of Hmong picture naming scores per child during data collection. This was an exploratory study involving participants at only one school. As a result, there was less chance of heterogeneity among participants and, due to limited resource staff, there were smaller sample sizes per participant. More data on Hmong would be more helpful in explaining findings regarding Hmong language development over time.

6. Future directions

Additional studies could extend the present findings to other language and age groups that have been inadequately represented in research. They could use the Picture Naming IGDI to assess English language development of linguistically heterogeneous samples, in order to determine the reliability and validity of this tool with different language groups. The Picture Naming IGDI could also be used to describe language development within specific language groups, since increasing number of classrooms have multiple language groups. Finally, additional studies may explore the sensitivity of the Picture Naming Individual Growth and Development Indicator to intervention. Possible research designs may involve determining the discrepancy between an English Language Learner's actual and expected performance on the Picture Naming and then intervening to minimize and finally eliminate that discrepancy.

7. Conclusions

Today's public schools are composed of students representing a number of nationalities who vary significantly in their competency in the English language. Especially today, educators need language measurement tools to track children's development over time and evaluate their progress in the curricula. This evaluation process poses many difficulties for schools with multilingual populations. The results of this study suggest that educators can use the Picture Naming IGDI to evaluate their student's language progress, specifically their vocabulary development, in both first-and second-language. More research is needed in order to replicate the above CBM advantages by using the Picture Naming IGDI with a wider range of young English

Language Learners. This study's promising results may pave the way for more researchers to start investigating the potential usefulness of the Picture Naming and other Individual Growth and Development Indicators with various language groups, so that these children are able to succeed in a fast growing and ever-changing information society.

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