Academic Bias in Language Testing: A Construct Validity Critique of the IPT I Oral Grades K-6 Spanish Second Edition (IPT Spanish)

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Abstract
Construct validity concerns for the IPT I Oral Grades K-6 Spanish Second Edition (IPT-S) as a measure of native oral language proficiency are examined. The examination included describing a subset of items that contributes most to overall score and native-language proficiency designation. Correlations between this subset of items and the overall score are calculated. Empirical evidence suggests that if a student cannot or does not answer four questions from the second section in a complete sentence, then the student will either be labeled as a non-speaker or a limited speaker in the native language. The authors argue that the requirement that speakers respond in complete sentences reflects a naïve view of language proficiency inconsistent with linguistic research, and characterize the requirement as "academic bias," that is, a prejudice resulting from a confusion of academic content knowledge related to language arts with actual linguistic ability, having the result of arbitrarily favoring members of the educated classes. The authors conclude that the IPT-S should not be used for Spanish language assessment with Spanish-speaking children.

Introduction

A number of teachers, policy makers and educational researchers have accepted, propagated, and even institutionalized the belief that some school-age children have no language. In the Los Angeles Unified School

District, for instance, the *Los Angeles Times* reported that 6,800 children were classified as "non-nons" and said to be "nonverbal in both English and their native language" (Pyle, 1996). Children are so classified as a result of native-language assessment, required or recommended for non-English speakers in many parts of the U.S.

We begin with an overview of existing state policies for the native language testing of English language learners in the U.S., and then present and critique the dominant paradigm in language minority education, the Threshold Hypothesis and associated BICS/CALP distinction, a conceptual framework consistent with native oral language testing practices. As a follow-up to MacSwan and Rolstad (2006), an internal validity analysis of the Spanish version of the IDEA Proficiency Test (IPT-S) (Amori & Dalton, 1996), a widely used native language assessment, is presented to show that the "non" or "limited" proficiency rating may follow from construct-irrelevant factors – such as knowledge of school and school culture, in the present instance. It is concluded that, in light of the validity concerns and the lack of relevant empirical evidence for the existence of "non-nons," as well as the possible negative effects of the label itself, educational agencies should abandon the practice of routinely assessing children's oral native language proficiency.

Native Language Assessment Policy in U.S. Schools

An important responsibility of schools in the U.S. is to determine whether or not a child knows English sufficiently well to succeed in an all-English instructional setting. In *Lau v. Nichols* (1974), the U.S. Supreme Court interpreted Title VI of the Civil Rights Act to prohibit discrimination against language-minority children by means of schools failing to provide for their special language-related needs. Thus, schools must determine, for any child enrolling in school, whether the child requires special assistance to understand school content. States that do not have laws prohibiting the use of languages other than English in school are able to provide children with bilingual instruction, making academic content comprehensible during the time needed to learn English.

An evaluation of children's English ability is appropriate – indeed, imperative – in light of these considerations. However, many states also require or recommend assessment of children's native language ability, with the result

that numerous children are identified as "non-nons" – that is, non-speakers of English, and non-speakers of their home language (typically Spanish, in the U.S. context), a condition historically known as "semilingualism" (Cummins, 1979; Skutnabb-Kangas, 1981). Table 1 lists states that require or recommend native language testing, and Table 2 presents the most frequently used tests of native language ability (as of 2001; see Mahoney & MacSwan, 2005).

Table 1

States which require or recommend native language assessment for English Language Learners (ELLs) as part of the identification process (Mahoney & MacSwan, 2005) and the number of ELLs in each of these states (Kindler, 2002), as of 1999-2000

State	*ELL Students*	*Total State Enrollment*	*Percentage of Total State Enrollment*
Arizona	125,311	850,840	14.73
Connecticut	20,190	553,993	3.64
District of Columbia	5,177	77,194	6.71
Hawaii	12,879	185,860	6.93
Illinois	143,855	2,027,600	7.09
Mississippi	1,799	500,716	0.36
Ohio	16,841	1,836,554	0.92
Oklahoma	28,823	627,032	4.60
Oregon	43,845	545,033	8.04
South Dakota	5,495	131,037	4.19
Texas	554,949	3,991,783	13.90
Virgin Islands	1,223	20,866	5.86
Virginia	31,675	1,133,994	2.79
Total	*1,043,614*	*12,482,502*	*8.36*

Rethinking the Dominant Paradigm in Language Minority Education

The practice of assessing the native language of bilingual children, if not directly derived from the Threshold Hypothesis and BICS/CALP framework (Cummins, 1976, 1979, 2000), is conceptually supported by it. The Threshold Hypothesis posits that children may enter into a state of "double semilingualism," brought about by a process of native language

Table 2
Tests Used by States for Native Language Assessment (Mahoney & MacSwan, 2005)

Instrument	Number of States
Language Assessment Scale-Spanish (LAS)	11
Idea Proficiency Test-Spanish (IPT)	10
Woodcock-Munoz-Spanish	5
Bilingual Inventory of Natural Language (BINL)	1
Bilingual Syntax Measure-Spanish (BSM)	1
Peabody Picture Vocabulary Test-Spanish (PPVT)	1

subtraction, as a result of contact with a second language in the early years. Semilingualism, also known as "limited bilingualism" (Cummins, 1981), has been defined in various ways, but it is most commonly considered to indicate "low levels in both languages," or "less than native-like command of the vocabulary and syntactic structures" of either language (Cummins, 1979, p. 230, 238). Cummins (1979) defined the Threshold Hypothesis as follows:

> Negative cognitive and academic effects are hypothesized to result from low levels of competence in both languages or what Scandinavian researchers (e.g. Hansegard, 196[8]; Skutnabb-Kangas & Toukomaa, 1976) have termed "semilingualism" or "double semilingualism" … Essentially, the lower threshold level of bilingual competence proposes that bilingual children's competence in a language may be sufficiently weak as to impair the quality of their interaction with the educational environment through that language. (p. 230)

Although the Threshold Hypothesis is widely accepted, no relevant evidence has been presented to support the "semilingualism" idea embedded within it. Paulston (1983), for instance, reviewed numerous Scandinavian studies which sought linguistic evidence for the existence of semilingualism in Sweden, and concluded that "there is no empirical evidence to support the existence of such a language development hiatus as "[semilingualism]" (p. 42, emphasis in original). MacSwan (2000) reviewed reputed evidence from

studies of language variation, linguistic structure, school performance, and language loss, and concluded that all of it was either spurious or irrelevant. MacSwan (2000) emphasized that semilingualism, as presented by its proponents, is indistinguishable from classical linguistic prescriptivism.

The semilingualism idea contrasts markedly with empirically grounded work on child language. As Chomsky (1965) observed long ago,

> A consideration of the character of the grammar that is acquired, the degenerate quality and narrowly limited extent of the available data, the striking uniformity of the resulting grammars, and their independence of intelligence, motivation and emotional state, over wide ranges of variation, leave little hope that much of the structure of language can be learned by an organism initially uninformed as to its general character. (p. 58)

Chomsky's statement paints a picture of children as inwardly-driven language learners who acquire their language perfectly and without instruction. During the most active acquisition period (ages 2-6), children learn approximately ten to twelve new words a day, often on one exposure and in highly ambiguous circumstances (Gleitman & Landau, 1994). Children know things about elementary aspects of sentence structure for which they have no evidence at all (Pinker, 1994), and in cases of creolization, children acquire syntactically and morphologically complex linguistic systems in accordance with universal principles of grammar in the presence of highly degenerate, rudimentary adult language input (pidgins) (Bickerton, 1981).

In an extensive review of research on child language in the preschool years, Tager-Flusberg (1997) reported that, "by the time children begin school, they have acquired most of the morphological and syntactic rules of their language," and possess a grammar essentially indistinguishable from adults (p. 188). This view represents a consensus among researchers in child language acquisition, where the matter has been investigated empirically for about three decades. Given these facts, it is remarkable that so many language-minority children in the U.S. would be classified as "nonverbal in both English and their native language," as Pyle (1996, p. A1) described, when they arrive at school, while majority language children are not so classified (and indeed, are not tested in this way).

A concept related to semilingualism in Cummins's framework is the distinction between Basic Interpersonal Communication Skills (BICS) and

Cognitive Academic Language Proficiency (CALP) (Cummins, 1976, 1979). Cummins (1994, 2000) also uses the terms "academic language" for CALP, and "conversational language" for BICS. "Considerably less knowledge of language itself is usually required to function appropriately in interpersonal communicative situations than is required in academic situations," Cummins (2000) claims, and academic language usually involves "much more low frequency vocabulary, complex grammatical structures, and greater demands on memory, analysis, and other cognitive processes" (p. 36). As MacSwan and Rolstad (2003) point out, the BICS/CALP distinction has many of the same negative conceptual consequences as does the Threshold Hypothesis. As with semilingualism, a problem emerges because BICS/CALP equates the language of school, and hence the language of the educated classes, with language that is inherently more complex, richer, and which places greater demands on cognitive resources. See MacSwan and Rolstad (2003) for further discussion.

One kind of purported evidence for semilingualism and the BICS/CALP distinction comes from students' test results on oral native language assessments such as the *Language Assessment Scales Oral-Español* (LAS-O Español), the *Idea Proficiency Test Spanish* (ITP-S), and the *Woodcock-Muñoz*, which purports to test a child's level of CALP in Spanish. In the present paper, we limit our analysis to construct validity issues in the IPT-S. See MacSwan, Rolstad and Glass (2002) for an analysis of the Pre-LAS Oral Español, and MacSwan and Rolstad (2006) for an external validity analysis of the LAS-O Español and the IPT-S.

Construct Validity of the Idea Proficiency Test Spanish (IPT-S)

Construct validity is the degree to which a test actually measures the construct of interest – oral language, in the case at hand. In attempting to refine the notion of validity, Messick (1990) noted, "Validity is an integrated evaluative judgment of the degree to which empirical evidence and theoretical rationales support the *adequacy* and *appropriateness* of *inferences* and *actions* based on test scores or other modes of assessment" (p. 1).

The IPT-S purports to be a test of language ability, and purports that its scores indicate the degree to which a child has acquired a language – Spanish, in the case of the IPT-S. In the case of assessing Spanish as a second language, we would naturally expect a wide range of ability levels. But it should come

as a surprise that children who are born and raised in a monolingual Spanish-speaking environment would be assessed as non- or limited speakers of Spanish.

To assist in determining whether the scores of language tests such as the IPT-S are valid, it will be useful to evaluate the implicit "theoretical rationale," in Messick's terms, of the IPT-S. The basic question under consideration is this: Do more correct responses on the test items which comprise the IPT-S consistently provide evidence of higher *Spanish oral language proficiency*? If so, then the test will correctly measure the intended construct, Spanish oral language proficiency. However, the test will lack construct validity to the extent that correctly answering items requires knowledge of some other, irrelevant domain – say, for instance, knowledge of school culture and school subjects.

A traditional idea in language arts, frequently attributed to Plato, is that a "complete sentence" consists of a subject and a predicate, and that "correct language" or at least "better speech" is characterized by such utterances. In the real world, however – and even in academia – people communicate in phrases shorter than sentences with very high frequency. Although no arguments have been advanced to sustain the idea that speech characterized by "complete sentences" is better speech, the notion has found its way into considerable educational work in minority language issues. For example, Schatzmann and Strauss (1955), who had interviewed monolingual members of the lower and middle classes about their impressions after the occurrence of a disaster, found that the former used lots of emotional language which reputedly gave rise to "elliptical syntax" and limited them to conveying meaning "implicitly," while the educated classes could do so "explicitly."

In a classic critique of such approaches, Labov (1970) reviewed work by Bereiter and colleagues (e.g., Bereiter & Engelmann, 1966) regarding the relationship between African-American Vernacular English (AAVE) and the poor educational achievement of African-American school children. Bereiter and Engelmann reported that the four-year-olds they studied communicated by gestures, "single words," and "a series of badly connected words or phrases." According to Bereiter and Engelmann, these children could "without exaggeration … make no statements of any kind," and could not ask questions. Of particular significance was Bereiter and Engelmann's expectation that children answer in complete sentences. In response to the question "Where

is the squirrel?" Bereiter and Engelmann's subjects tended to answer "In the tree" – a response the researchers characterized as illogical and badly formed. As Labov (1970) pointed out, the response "In the tree" is the natural response in this context, and the one that anybody would use under normal circumstances–except, perhaps, in the context of an academic exercise.

Indeed, an examination of the contents of the IPT-S suggests that the test is much more an assessment of academic knowledge than of language ability. For instance, the second part of the IPT-S asks four questions to which students are required to provide answers in complete sentences, as shown in Table 3. Students who miss these (or any other) four questions on this part are labeled "limited Spanish speaking." After a first incorrect response, the test administrator directs the student to "answer the question in a complete sentence."

Table 3
Items on "Level C" of the ITP Spanish that Require Students to Answer in Complete Sentences

Item	Required student response	Prompt
17. ¿Qué está haciendo el niño? [What is the boy doing?]	El (niño) está leyendo/ estudiando. [The boy is reading/ studying.]	Picture of boy looking at book.
18. ¿Cuántos manos tengo yo? [How many hands do I have?]	Usted tiene dos manos./Tú tienes … [You have two hands.]	None.
21. ¿Pueden correr los caballos? [Can horses run?]	Sí, pueden correr. [Yes, they can run.]	None.
22. ¿Vuelan los elefantes como los pájaros? [Do elephants fly like birds?]	No, los elefantes no vuelan. [No, elephants don't fly.]	None.

Putting aside the inconsistency in the implicit definition of a "complete sentence" and the heavily decontextualized nature of the items, we must ask whether the ability to recognize or produce a complete sentence on demand ought to factor into our assessment of a native speaker's knowledge of language. Indeed, few of us would produce answers like those required above if asked these questions. The natural response to item 1 in Table 3, for instance, is simply *Leyendo* or *Estudiando* ("Reading/Studying").

Indeed, one's ability to answer in a fragment reveals detailed covert knowledge of linguistic structure. For instance, if asked a question such as item 4 in Table 3, we rely on our knowledge of the internal structure of the phrase to determine possible shortened forms of the sentence, such as *No* and *No, they don't*; we can also reflect on our knowledge of language to determine which shortened versions are not structurally possible (e.g*., No, they* / *No, they do*). In fact, answering the question in the desired way requires that we suspend our knowledge of pragmatics, which tells us that we can delete recoverable information, in order to comply with an institutional requirement to respond in a so-called complete sentence.

Most people learn about the concept of complete sentences in school, which is why the ability to identify them so they can be produced on demand should be regarded as part of the domain of academic achievement, not an aspect of knowledge of language. A language is a set of expressions generated by a grammar, which maps meaning to sound (Chomsky, 1986, 2006). Very early on, children exhibit complex knowledge of word order, word structure, pronunciation, discourse structure, and appropriate use of language in distinct situations. All normal children exhibit this knowledge, regardless of their specific cultural background or life experiences. By contrast, knowledge of particular communities and cultural practices – including those internal to the school – depend upon one's interests and specific language-learning environments. If we define *language proficiency* in such a way as to include highly particular cultural knowledge, what should be regarded as a simple cultural difference suddenly becomes a linguistic dividing line which enormously privileges those with more socially valued cultural capital in hand. Only a small segment of the human race experiences formal schooling, and even fewer excel at it; but all of us know a language. It is therefore necessary to examine empirically the degree to which the "complete sentence" requirement of the IPT-S influences overall proficiency designations.

Method

Participants

Participants included 174 first- through third-grade Hispanic students in the Phoenix Metropolitan area. This sample came from two schools and consisted of 59 (33.9%) first-graders, 52 (29.9%) second-graders, 60 (34.5%)

third-graders, and one (.6%) fourth-grader. Two students are missing grade-level information. The sample is distributed approximately evenly among boys and girls. All participants were selected from Spanish-speaking households.

Instrument

As mentioned, the IPT-S intends to determine the level of Spanish oral language proficiency of Hispanic primary-school students and others. It also provides the information necessary to immediately designate these students as Non-Fluent (NSS), Limited (LSS), or Fluent Spanish Speaking (FSS), as well as provide diagnostic information for instruction. Test authors claim the IPT-S assesses four basic areas of Spanish oral-language proficiency: Vocabulary, Comprehension, Syntax, and Verbal Expression, which includes articulation. There are six levels of difficulties tested: Levels A, B, C, D, E, and F. All students are tested individually.

Test Format

There are six sections (level A, B, C, D, E, F) and students continue through the test until they miss a specified number of items. Section B has 12 questions; section C has 17 questions; section D has 21 questions; section E has 19 questions; and section F has 16 questions. According to the technical manual, students are led through progressively more difficult items in lexicon, grammar, and comprehension.

Procedure

Data were collected in two different elementary schools in a large urban district. Participation in this study was voluntary with permission granted by parents. The participants selected were identified as (1) scoring non-proficient in oral language on the Language Assessment Scale-English (LAS-English), (2) having ELL classification status, and (3) being between the ages of six and eight (inclusive). Trained native Spanish-speaking personnel administered the IPT-S one time for each participant. The administrator of the test calculated the score and fluency level for each participant following the IPT-S scoring instructions.

Results

Frequencies

Test scores show that only 17 (9.8%) of the sample were labeled as FSS (Fluent Speakers of Spanish). Figure 1 shows the frequencies of proficiency labels for our sample as determined by the test.

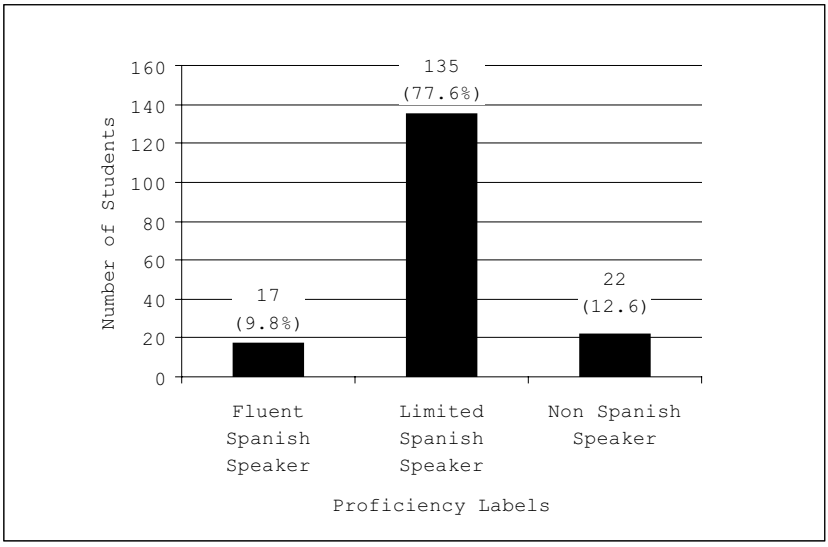

Figure 1. *Frequency of Non-Spanish Speaker, Limited Spanish Speaker, and Fluent Spanish Speaker on the IPT Spanish (N = 174)*

Error Pattern Analysis and Item Content Analysis

Students end the IPT-S once they have missed a specified number of items; the number of allowable incorrect items is different for each section. It is assumed that once students score at the ceiling level specified for any given section, they would have answered incorrectly for the remainder of the test.

An error pattern analysis for this sample shows most subjects ended the test in section C. In the item-level data, between item 29 and item 30, the sample size decreased from 158 students to 47 students. Item 29 is the last item in section C, and item 30 is the first item of section D. Depending on a child's current grade and testing purpose, failing to advance to section D will result in a LSS (Limited Spanish Speaker) designation.

The dramatic drop in the number of students advancing to section D warrants a closer examination of section C and an item content analysis. According to test directions, a student would stop at the end of section C if he has at least four incorrect answers of 17 total items. Our item-level content examination uncovered exactly four items in section C requiring the child to answer in complete sentences, shown earlier in Table 3.

Correlations

The four items requiring that a child answer the question in a complete sentence (17, 18, 21, 22) as individual items and as a subgroup were examined. Table 4 shows the correlations between these four items, their sum, and the overall proficiency level.

Table 4

Correlation for the Four Items (17, 18, 21, 22) and Their Sum to the Overall Proficiency Level (N = 174)

Items	17	18	21	22	Sum of All Four	Overall Proficiency Level
17	-	.383	.343	.352	.717	.493
18		-	.298	.304	.696	.528
21			-	.421	.723	.475
22				-	.728	.576
Sum of All Four					-	.724
Overall Proficiency Level						-

Note. All Correlations are significant at the 0.01 level.

If a student does not have the overt academic knowledge required to identify a complete sentence, then she is likely to answer incorrectly to items 17, 18, 21, and 22 in section C. If a child misses all four items, she has reached

the maximum allowable errors in section C and will have to stop, thereby achieving a score designating her as Limited Spanish Speaker. As one sees in Table 4, each individual item has a high correlation with the overall proficiency level, and the sum of these four items has an especially high correlation with the overall proficiency score (.724, $p = .01$).

Frequency of Errors in Four Items

Since items 17, 18, 21, and 22 have a high correlation with the overall score, and since the format of the test directs the administrator to stop at the end of section C for students with four or more errors, it is important to examine these four items and compute error frequencies for our sample, as shown in Table 5.

Table 5
Total number of errors from items 17, 18, 21 and 22

Number of Errors	Number of Students	Percent Total Students
0	38	21.8
1	38	21.8
2	35	20.1
3	32	18.4
4	31	17.8

The average error rate for these four items combined is 2.11 with a standard deviation of 1.4. Table 5 shows the number of students who missed two, three, or four complete-sentence items out of a possible four misses to be 98 (56.3%). It is likely that over half of our sample was terminated at the end of section C based upon their answers to these four questions requiring a complete-sentence answer.

Discussion and Conclusions

Whether the IPT-S test designates a student as a limited speaker rests largely on whether the student has knowledge of what a complete sentence is and, when prompted, can respond to each of four questions in section C in a full sentence. IPT-S is not so much a measure of oral language proficiency as it

is a measure of school cultural knowledge related to subjects such as language arts, realized in a student's demonstrated ability to recognize and produce a complete sentence on demand. The test is reminiscent of Labov's (1970) rebuke of Bereiter long ago, and justifies quotation of his scolding words: "That educational psychology should be strongly influenced by a theory so false to the facts of language is unfortunate; but that children should be the victims of this ignorance is intolerable" (p. 260).

As researchers and policymakers achieve greater clarity about language proficiency and its relationship to academic achievement, one hopes that explanations of failure in school will no longer be rooted in children's linguistic resources at home. At a more practical level, we recommend that schools do not routinely use the IPT-S or related tests to assess children's oral native language proficiency. Spanish-speaking children, like any others, should be referred for assessment for language disorders on a case by case basis, when an informed clinician determines that the child's language exhibits characteristics typical of children with language impairments. To determine whether children are indeed proficient in Spanish rather than English, and whether they are therefore better served by a bilingual program, much more useful and meaningful information can be obtained through sufficiently detailed interviews with a parent and the child.

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