

# Emergent Literacy Skills of Bilingual Language Learners with Hearing Loss: Assessment Considerations

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## ABSTRACT

Children with hearing loss, as a group, show delays acquiring emergent literacy skills, which may impact acquisition of academic literacy skills. This study is the first step of a larger study examining the impact of bilingualism on the emergent literacy skills of children with hearing loss. Preliminary data is presented to identify appropriate measures of phonological awareness and print awareness within this population. The selected measures did not demonstrate ceiling or floor effects for the range of hearing ages in this sample. Children in the early stages of literacy acquisition (identifying sight words) tended to perform at ceiling on measures of initial sound sorting but not rhyming or print awareness. Bilingual children displayed different profiles of performance depending on the language of the test.

## INTRODUCTION

Many children with hearing loss show delays in acquiring emergent literacy skills such as phonological and print awareness (Paul, 2009). These delays can profoundly impede conventional literacy development (word decoding, reading comprehension, written expression, spelling). The extant literature indicates that only 3% of 18-year-olds with hearing loss read at the same level as their peers with normal hearing (Marschark, Lang, & Albertini, 2002). On average, children with hearing loss plateau at the third- or fourth-grade reading level (Paul, 2009). Despite technological advances in amplification for children with hearing loss, the average reading level for this population has not increased in the past several decades (Trybus & Karchmer, 1977; Paul, 2009).

The number of bilingual language learners with hearing loss has been steadily increasing (Rhodes, Price, & Perigoe, 2004). Current research does not define the impact of bilingualism on the emergent literacy skills of children with or without hearing loss. Despite evidence that normal-hearing bilingual children demonstrate superior overall metalinguistic skills as compared to monolingual children, they do not consistently demonstrate superior phonological awareness skills (Bialystock, 1988, Bialystock, Majumder & Martin, 2003, Bruck & Genesee, 1995). Bialystock, Majumder and Martin (2003) found in particular that phonological awareness may be linked to specific languages spoken by bilingual children: Spanish-English bilingual language learners demonstrated better phoneme segmentation skills than both monolingual English and bilingual Chinese-English speaking children. Limitations in the literature concerning the emergent reading skills of bilingual children do not allow investigators to predict whether bilingual language learning provides an advantage or disadvantage to bilingual children with hearing loss.

The long-term goal of our research is to evaluate the effects of Spanish-English bilingualism on emergent literacy skills in young children with hearing loss. An understanding of the relationship between bilingualism, hearing loss, and early literacy skills may inform intervention options within this population. The purpose of the present study is to conduct preliminary analyses of phonological awareness, print awareness, and vocabulary measures administered to monolingual and bilingual children with hearing loss. Review of these results should provide direction as to the utility of these measures in skill assessments of this population.

Specifically, we asked:

- (a) Do selected measures of early literacy skills show ceiling or floor effects for children with hearing loss across certain hearing ages?
- (b) Do selected measures of early literacy skills show ceiling or floor effects for children able to identify sight words?
- (c) Do bilingual language learners display the same knowledge of emergent literacy on tests administered in English versus Spanish?

## PARTICIPANTS

Ten children with hearing loss participated in this study. They were recruited from an oral option preschool in the Nashville area, and all children reported spoken language as their only communication mode. Three participants were from Spanish-language home environments and only spoke English in school. All other participants were monolingual speakers of English.

Table 1. PARTICIPANT CHARACTERISTICS

Participant	Home Language	Hearing Loss	Devices	Hearing Age (mos.)	Chronological Age (mos.)
1	Spanish	Profound	CI	32	65
2	Spanish	Mild to Profound	CI, HA	52	76
3	English	Profound	CI	16	44
4	Spanish	Moderate to Severe	HA	60	73
5	English	Moderate-Severe	HA	45	67
6	English	Moderate-Severe	HA	8	52
7	English	Severe to Profound	CI	18	42
8	English	Severe to Profound	CI	22	52
9	English	Profound	CI, HA	20	55
10	English	Profound	CI	43	71

## METHODS

The following measures were administered to participants as indicated:

Table 2. MEASURES ADMINISTERED

Participant Group	Measure	Skills Assessed
Monolingual and Bilingual	Test of Word Reading Efficiency	Decoding single words
Monolingual and Bilingual	Phonological Awareness and Literacy Screening- Pre-Kindergarten	Name Writing Alphabet Knowledge Beginning Sound Awareness Rhyme Awareness Print Awareness Nursery Rhyme Awareness Beginning Sound Awareness
Monolingual and Bilingual	Phonological Awareness and Literacy Screening- Kindergarten	
Monolingual	Receptive One Word Picture Vocabulary Test- English	Receptive Vocabulary
Bilingual	Receptive One Word Picture Vocabulary Test- Bilingual	Receptive Vocabulary
Monolingual and Bilingual	Get Ready to Read Screener- English Edition	Rhyme Awareness Letter name identification Letter Sounds Print Awareness Initial Sound Awareness
Bilingual	Get Ready to Read Screener- Spanish Edition	Rhyme Awareness Letter name identification Letter sounds Print Awareness Initial Sound Awareness Expressive vocabulary
Monolingual	Expressive One Word Picture Vocabulary Test- English	Expressive vocabulary
Bilingual	Expressive One Word Picture Vocabulary Test- Bilingual	Expressive vocabulary
Monolingual and Bilingual	Preschool Word and Print Awareness: English	Print concepts Words in Print
Bilingual	Preschool Word and Print Awareness: Spanish adapted version	Print concepts Words in Print

The Test of Word Reading Efficiency (TOWRE; Torgesen, Wagner & Rashotte, 1999), Phonological Awareness and Literacy Screening- Pre-Kindergarten (Invernizzi, Sullivan, Meier, & Swank, 2004); Phonological Awareness and Literacy Screening- Kindergarten: Beginning Sound Awareness Subtest (Invernizzi, Sullivan, Meier, & Swank, 2004); Get-Ready-to-Read Screeners in Spanish and English (Whitehurst, 2001); Expressive and Receptive One Word Picture Vocabulary Tests (ROWPVT, EOWPVT) English and Spanish-English Bilingual versions (Brownell, 2000); and an adapted version of the Preschool Word and Print Awareness Assessment (Justice & Ezell, 2000).

## RESULTS

(a) Do selected measures of phonological awareness and print awareness show ceiling or floor effects for children with hearing loss across certain hearing ages?

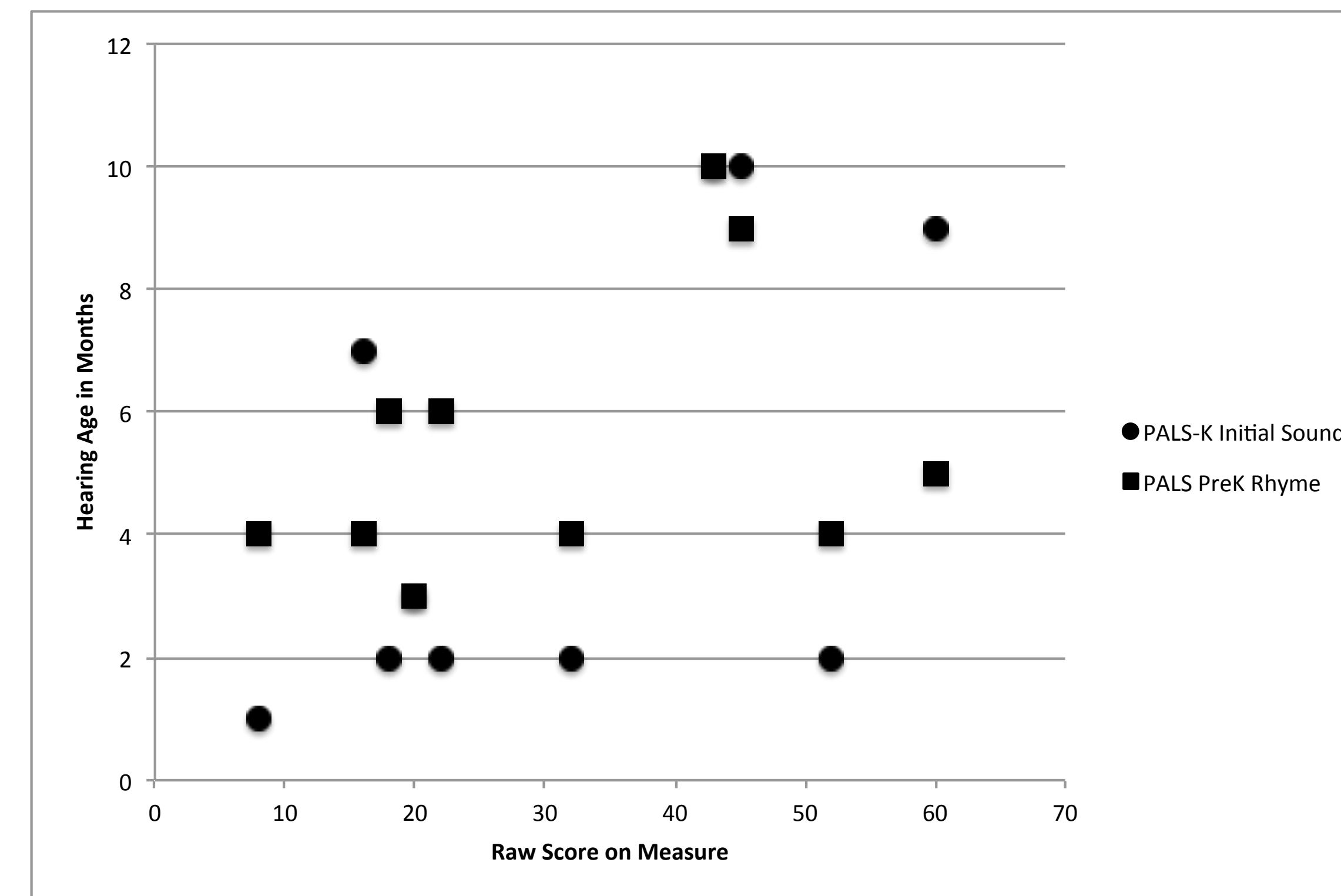


Figure 1. PHONOLOGICAL AWARENESS MEASURES

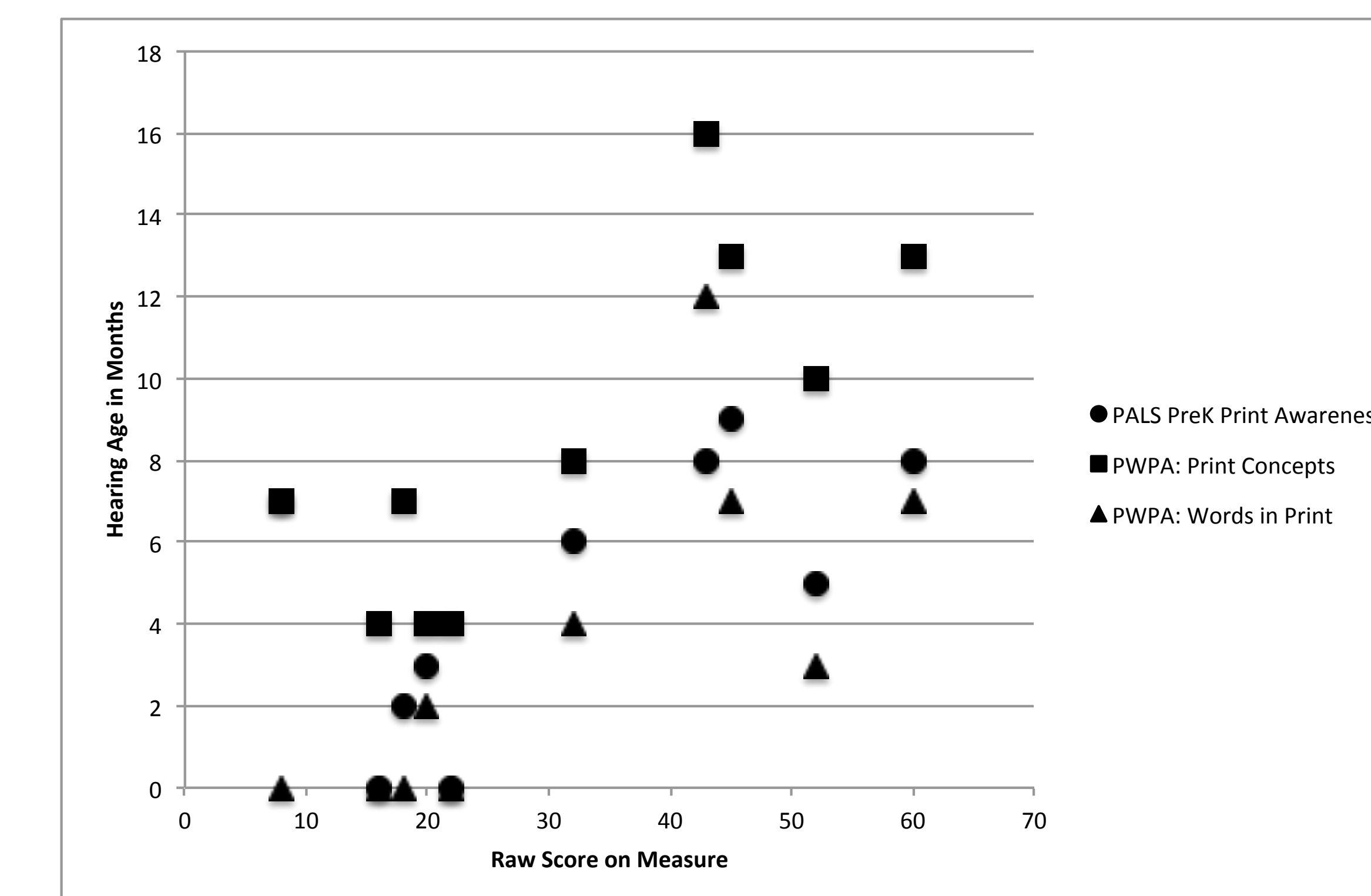


Figure 2. PRINT AWARENESS MEASURES

(b) Do selected measures of early literacy skills show ceiling or floor effects for children able to identify sight words at the first-grade level?

Table 3. PERCENT ACCURACY ACROSS MEASURES FOR PARTICIPANTS ABLE TO IDENTIFY SIGHT WORDS

Participant	PALS-K Initial Sounds	PALS PreK Rhyme	PALS PreK Print Awareness	Get Ready to Read English	PWPA: Print Concepts English	PWPA: Words in Print English
4	90%	50%	80%	85%	65%	35%
5	100%	90%	90%	75%	65%	35%
10	100%	100%	80%	80%	80%	60%

## RESULTS

(c) Do bilingual language learners display the same knowledge of emergent literacy on tests administered in English versus Spanish?

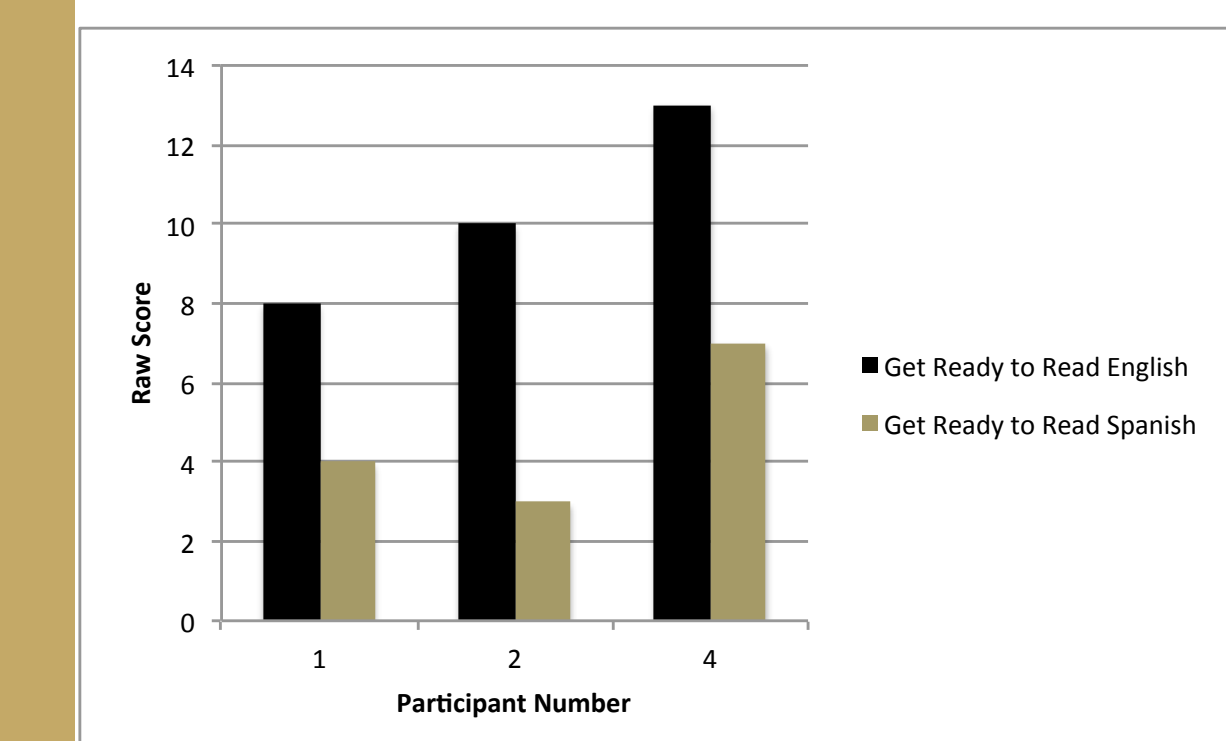


Figure 3. BILINGUAL PERFORMANCE ON GET READY TO READ MEASURE

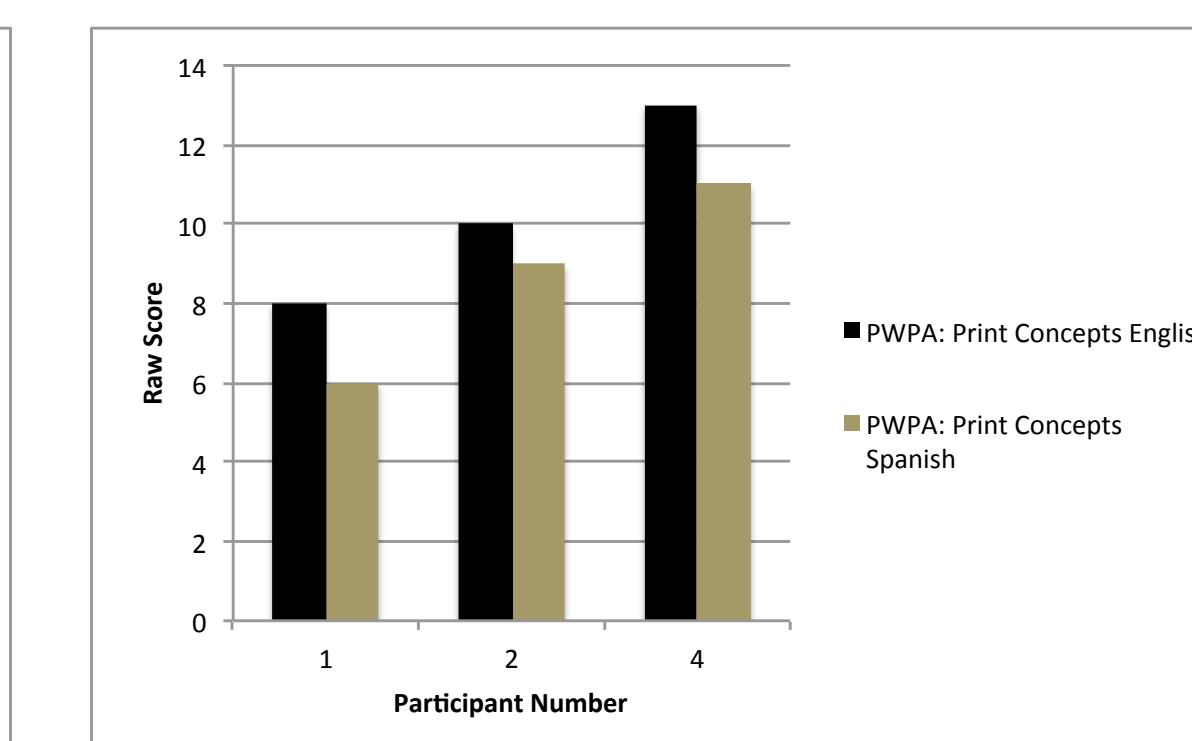


Figure 4. BILINGUAL PERFORMANCE ON PWPA: PRINT CONCEPTS

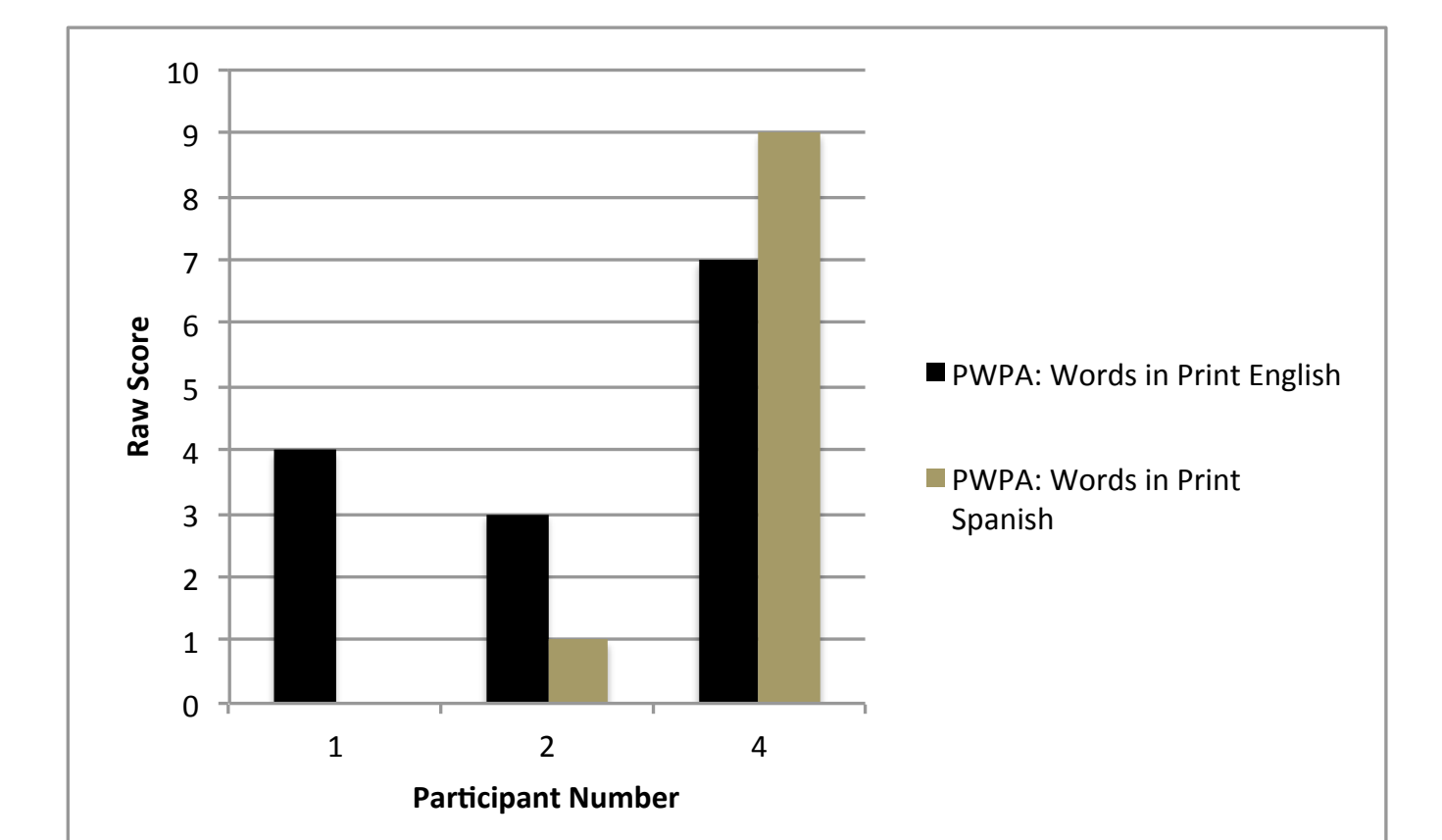


Figure 5. BILINGUAL PERFORMANCE ON PWPA: WORDS IN PRINT

## DISCUSSION

The purpose of this preliminary investigation was to select appropriate measures of emergent literacy for monolingual and Spanish-English bilingual children with hearing loss. This data will inform selection of measures in a larger project investigating differences in emergent literacy skill acquisition across children with hearing loss from monolingual and bilingual homes. Findings from this study indicate that preschool children with hearing loss do not consistently perform at the floor or ceiling of the measures selected based on their hearing age or ability to identify sight words. Further, this data demonstrated that bilingual language-learning children do not exhibit the same emergent literacy skills when tested in both of their languages.

The measures assessed in this study all appeared to capture variations in skill level across this group of children with hearing loss. Each of these measures may be useful in a future investigation describing the emergent literacy skills of both monolingual and bilingual children with hearing loss. To fully capture the skills of a bilingual child assessment should be conducted in both languages, as the bilingual participants in this study did not display consistent phonological awareness, print awareness, or word concept knowledge across both languages.

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LIST OF CITED REFERENCES AVAILABLE ON REQUEST  
[www.mc.vanderbilt.edu/LANGUAGELAB](http://www.mc.vanderbilt.edu/LANGUAGELAB)

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