Phonological Awareness of Malaysian Bilingual Children

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ABSTRACT

The interest in children developing literacy contributes to the increasing studies on phonological awareness. In relation to this, this paper discussed the performance on phonological awareness tasks of Malaysian bilingual children across groups. The findings from one aspect of a wider study which involved two groups of bilingual children (N=20: 10 bilingual good readers; 10 bilingual poor readers) are presented. The participants were administered tasks of phonological awareness in Bahasa Melayu and English. The results showed that there are differences in terms of performance between groups. The bilingual poor readers showed lower performance than the bilingual good readers on tasks of phonological awareness. The results also showed that there is a similar pattern in terms of performance on tasks across languages for both groups. The impact of phonological awareness on the participants' performance is highlighted.

INTRODUCTION

Phonological awareness refers to one's awareness of speech sounds. A person with strong phonological awareness is said to have "the ability to store, access, retrieve and manipulate the auditory units of words" (Manisah, 2000). Such ability with the sounds of spoken language enables one to readily apply one's phonological awareness skills to decode print (read).   Phonological awareness is documented as one of the predictors of literacy development and has long been associated with the acquisition of alphabetic reading skills (Cupples & Iacono, 2000; Smith et al., 2001). Children experiencing difficulties in developing their literacy are said to have poor phonological awareness (Borstrøm & Elbro, 1997).

The impact of different languages on phonological awareness tasks provides evidence on children's phonological awareness skills according to languages. Cossu et al. (1988) discovered that factors like differences in syllable structures across

languages, orthography and teaching methods may contribute to differences in performance on phonological awareness tasks. Cossu et al. investigated the development of phonological awareness in Italian and English-speaking American children. Their findings showed that the Italian-speaking participants performed better on phonological awareness tasks than the English-speaking participants. Their findings also confirmed Shankweiler's (1991) report which stressed that in terms of individual phonological awareness task performance, the task of phoneme segmentation is more difficult than the task of syllable segmentation.

Bruck and Genesee (1995) stress that in many cases "bilingualism affects the development of specific phonological awareness skills". In their study on monolingual English speaking children and bilingual English speaking children attending French schools, they found that the phonological input from one language can influence the rate and pattern of the phonological input of another language. This indicates that bilingualism provides "a form of contrastive linguistic instruction" which enable bilingual children to be more advanced in analysing and comparing the structural aspects of language (Bruck and Genesse, 1995). Bruck and Genesee further emphasize that the "distinctive letter markers that become incorporated into memory as orthographic representations" allow children to distinguish and identify the phoneme units. In cases of bilingual poor readers, they may experience difficulties in phonological processing. This is because the difficulties that they experience may affect their performance on cognitive tasks, in this case, the phonological awareness tasks (Dockrell and McShane, 1993). Since processing may be difficult, the bilingual poor readers' ability to distinguish and identify the phonological units may not be an easy task. Stuart-Smith and Martin (1997), however, found that there is no difference in processing phonological awareness across languages. Their study on bilingual Panjabi-English children revealed that no language-specific order was found when these children were administered phonological awareness tasks in Panjabi and English.

Rickard Liow and Poon (1998) investigated the role of language background in the development of phonological awareness. Children from three different language backgrounds, English, Chinese and Bahasa Indonesia were involved in their study. In the case of the Bahasa Indonesia group, they found that language background could influence the development of phonological awareness. The characteristics of the language system like the script facilitate such influence. Earlier, studies by Durgunoglu, Nagy and Hancin-Bhatt (1993) and Cisero and Royer (1995) reveal evidence of cross-lingustic transfer in performance of children on phonological awareness tasks in different languages.

Although many studies on phonological awareness have been focused on English, there is considerable research evidence showing studies on phonological awareness in other languages, for example Italian (Cossu et al., 1988) and Chinese (Suk-Han Ho & Bryant, 1997). In relation to bilingualism, the number of studies linking phonological awareness to bilingualism is increasing (see Cisero & Royer, 1995; Stuart-Smith & Martin, 1997; Rikard-Liow & Poon, 1998 and Manisah, 2000). In this context, this paper reports on one aspect of a wider study which aims to identify the different levels of attainment in phonological awareness skills in relation to Malaysian bilingual learners. In addition, this paper aims to report on the impact of being bilingual on performance in phonological awareness. Based on these aims, the research questions are:

1. What is the group performance on phonological awareness tasks in Bahasa Melayu and in English?

2. Which phonological awareness skill(s) is/are prominent in terms of strengths and difficulties between languages and across languages?

3. Are there any similarities between groups in terms of task strengths and difficulties?

METHODOLOGY

The participants consisted of two groups, bilingual good readers (n=10) and bilingual poor readers (n=10). The categorization of these participants was based on teacher designtion as well as performance on their regular monthly assessment in Bahasa Melayu and English. The mean age for bilingual good readers was 8 years 3 months and for bilingual poor readers it was 8 years 5 months. As the participants were children who were in the early years of schooling, being bilingual meant they:
- had some level of proficiency in English
- could understand simple English such as simple instructions and conversations
- could read simple English words and sentences

All of the participants were from the same school and were of the same socio-economic group.

To assess the participants' phonological awareness skills, each participant was given a set of phonological awareness tasks in both languages, Bahasa Melayu and English. The development of these tasks was based on the studies of Yopp (1988), Stahl and Murray (1994), Bruck and Genesee (1995), Cisero and Royer (1995), Oney and Durgunoglu (1997), and Stuart-Smith and Martin (1997). The chosen tasks were syllabic segmentation*, judging alliteration*, generating alliteration, judging rhyme, generating rhyme, isolating onset, deleting onset, isolating coda, deleting coda and phonemic segmentation.

In the syllabic segmentation task, the participants were required to identify the number of syllables existing in the given word (stimulus). The judging alliteration required the participants to listen to the task stimuli and choose a word which alliterates with the onsets or the first sounds of the stimuli. The generating alliteration required participants to generate two or more words which alliterate with a given word. The task of judging rhyme aimed to assess children's ability to access words that rhyme.

The tasks on isolating and deleting onsets and codas focused on participants' awareness of onsets and codas. This isolation onset task required participants to manipulate and isolate the first sound (onset) of the stimuli given to them. Similar to the isolating onset task, the isolating coda task assessed the participants' ability to manipulate the stimuli except that the output was in the form of the final sound or coda. Both deleting the onset and deleting the coda tasks required the participants' ability to manipulate the stimuli and delete the required sound. In the case of deleting onset, the output for this task should be the remaining sounds of each of the stimuli. If the word 'cup' is given as the stimulus, the participants were required to delete the first sound /k/ and respond by providing the sound /ʌp/. The deletion the coda task required the participants to respond to the stimuli by giving the output in terms of the onset and nucleus, but not the coda. For example, when given the word `sit', the participants were to respond with /si/. Lastly, the phonemic segmentation task required the participants to respond by tapping the number of phonemes in each stimulus. The data from the tasks were analysed using descriptive statistics for group performance on tasks in Bahasa Melayu and English and analysis of variance for statistical significance difference between tasks in both languages.

RESULTS

On performance on phonological awareness tasks in Bahasa Melayu, the results (Table 1) showed that tasks of judging alliteration (9.8), syllabic segmentation (9.6), deleting onset (9.7) and generating alliteration (9.5) were among the easiest for the bilingual good readers.   This group showed almost ceiling scores in all tasks except for the tasks of generating rhyme (7.75) and deleting coda (8.9). These high mean scores indicated that the group had a high level of ability in terms of phonological processing.

The bilingual poor readers were found to have difficulties in responding to tasks of generating rhyme (2.05), deleting onset (4.1), and isolating coda (3.3). This suggests that poor performance may be due to the poor speech processing ability of the group. Figure 1 shows the pattern of responses of bilingual good readers and bilingual poor readers on phonological awareness tasks in Bahasa Melayu.

TABLE 1: MEAN SCORES AND STANDARD DEVIATIONS OF GROUP PERFORMANCE ON PHONOLOGICAL AWARENESS TASKS IN BAHASA MELAYU

Tasks/ Groups	Bilingual Good Readers	Bilingual Poor Readers
1. Syllabic Segmentation	9.6 (.516)	7.0 (2.0)
2. Phonemic Segmentation	9.0 (1.886)	5.0 (3.682)
3. Judging Alliteration	9.8 (.632)	5.8 (1.989)
4. Generating Alliteration	9.5 (.577)	7.45 (2.576)
5. Judging Rhyme	9.2 (.919)	7.6 (2.271)
6. Generating Rhyme	7.75 (2.486)	2.05 (3.013)
7. Isolating Onset	9.3 (2.214)	5.4 (3.534)
8. Deleting Onset	9.7 (.949)	4.1 (3.414)
9. Isolating Coda	9.1 (1.595)	3.30 (4.029)
10. Deleting Coda	8.9 (2.807)	7.0 (4.0)

FIGURE 1: MEAN SCORES OF PERFORMANCE ON PHONOLOGICAL AWARENESS TASKS IN BAHASA MELAYU ACCORDING TO GROUPS
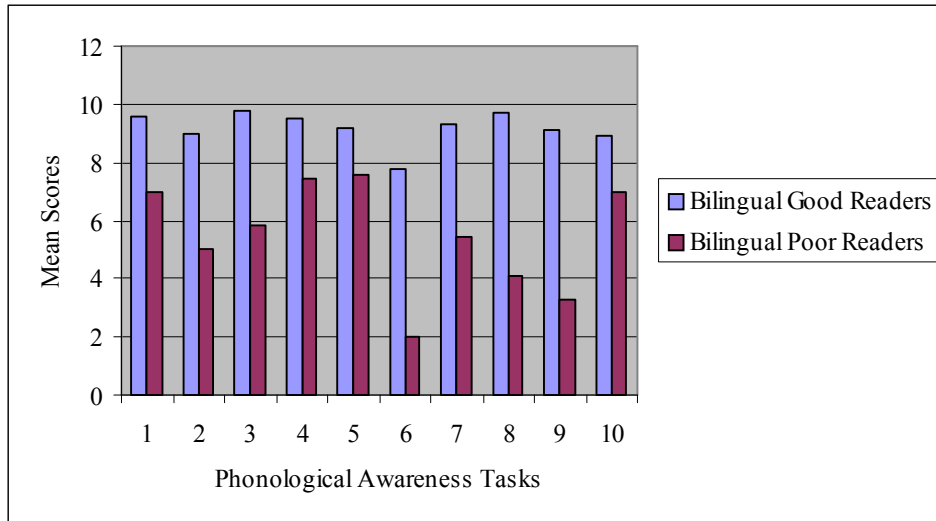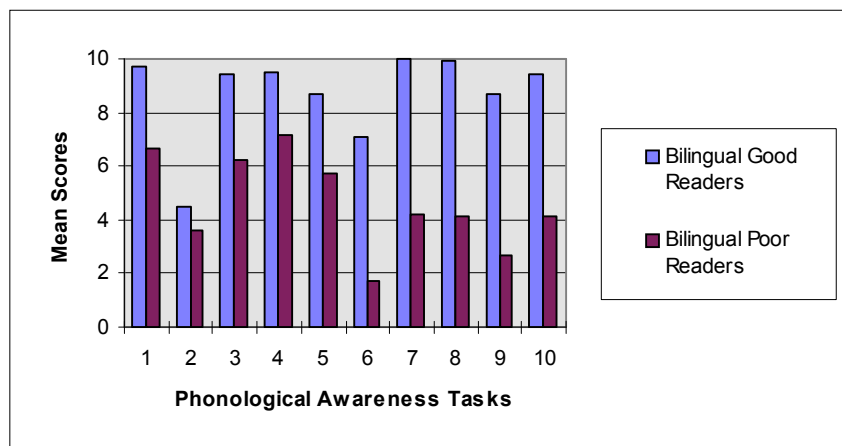

Key: 1. Syllabic Segmentation 2. Judging Alliteration 3. Generating Alliteration 4. Judging Rhyme 5. Generating Rhyme 6. Isolating Onset 7. Deleting Onset 8. Isolating Coda 9. Deleting Coda 10. Phonemic Segmentation

For performance on phonological awareness tasks in English (see Table 2), bilingual good readers scored ceiling and near-ceiling scores on tasks of isolating onset (10.0), deleting onset (9.9) and syllabic segmentation (9.7). However, they were found have difficulties in responding to phonemic segmentation task (4.5). In contrast to the bilingual good readers, bilingual poor readers showed mid-range to low performance on all phonological awareness tasks (see Table 2). Their highest mean scores were on generating alliteration (7.15) and syllabic segmentation (6.7) and their lowest score was on generating rhyme (1.750). A closer look at the standard deviation values in Table 2 revealed that the bilingual poor readers might have encountered difficulties in responding to the same group tasks items for example in the tasks of judging rhyme and generating rhyme. Table 2 also shows that this group did not respond well to the tasks of isolating onset, deleting onset, isolating coda and deleting coda. In sum, the bar graph in Figure 2 shows that the pattern of responding to tasks is not consistent for the bilingual poor readers.

TABLE 2: MEANS SCORES AND STANDARD DEVIATIONS OF GROUP PERFORMANCE ON PHONOLOGICAL AWARENESS TASKS IN ENGLISH

Tasks/Groups	Bilingual Good Readers	Bilingual Poor Readers
1. Syllabic Segmentation	9.7 (.483)	6.7 (1.947)
2. Phonemic Segmentation	4.5 (3.440)	3.6 (2.319)
3. Judging Alliteration	9.4 (1.578)	6.2 (2.348)
4. Generating Alliteration	9.5 (.667)	7.15 (1.780)
5. Judging Rhyme	8.7 (1.767)	5.7 (1.494)
6. Generating Rhyme	7.1 (2.89)	1.750 (1.458)
7. Isolating Onset	10.0 (.000)	4.2 (3.490)
8. Deleting Onset	9.9 (.316)	4.1 (4.886)
9. Isolating Coda	8.7 (1.337)	2.70 (3.368)
10.Deleting Coda	9.4 (.843)	4.10 (3.446)

FIGURE 2: MEAN SCORES OF PERFORMANCE ON PHONOLOGICAL AWARENESS TASKS IN ENGLISH ACCORDING TO GROUPS

Key: 1. Syllabic Segmentation 2. Judging Alliteration 3. Generating Alliteration 4. Judging Rhyme 5. Generating Rhyme 6. Isolating Onset 7. Deleting Onset 8. Isolating Coda 9. Deleting Coda   10. Phonemic Segmentation

The results of analysis of variance (Table 3) shows that the tasks were mostly statistically significant at $p<0.01$ for both languages, Bahasa Melayu and English. Statistically significance difference at $p<0.05$ is found for two tasks in Bahasa Melayu: generating alliteration, $F(1,20) = 6.03$ and judging rhyme, $F(1,20) = 4.27$. There was no statistically significant difference for tasks of deleting coda in Bahasa Melayu and phonemic segmentation in English. The low mean scores for these tasks suggested that both groups, the bilingual good readers and bilingual poor readers encountered difficulties in attending to these tasks.

TABLE 3: RESULTS OF THE ANALYSIS OF VARIANCE BETWEEN THE BILINGUAL GOOD READERS AND THE BILINGUAL POOR READERS ON PHONOLOGICAL AWARENESS AND LITERACY TASKS IN BAHASA MELAYU AND ENGLISH

Tasks	df	Bahasa Melayu		English	
		MS	F	MS	F
Syllabic Segmentation	1	33.80	15.84**	45.00	22.38**
Phonemic Segmentation	1	80.00	9.35**	4.05	.47n.s
Judging Alliteration	1	80.0	36.73**	51.20	12.80**
Generating Alliteration	1	21.01	6.03*	27.61	15.28**
Judging Rhyme	1	12.8	4.27*	45.00	16.80**
Generating Rhyme	1	143.11	27.25**	162.45	21.28**
Isolating Onset	1	76.05	8.75**	168.20	27.62**
Deleting Onset	1	156.80	24.97**	169.20	14.03**
Isolating Coda	1	168.20	17.91**	180.00	27.41**
Deleting Coda	1	18.05	1.51n.s	140.45	22.31**

n.s. = non-significant
* = $p<0.05$
** = $p<0.01$

DISCUSSION

Between the two groups, the bilingual good readers showed the highest performance on phonological awareness tasks in both Bahasa Melayu and English. Alternately, low performance on phonological awareness tasks showed by the bilingual poor readers suggested that they might be experiencing difficulties in phonological processing. The low performance relates to Berkelhammer's (1996) finding that "deficits in phonological awareness restrict acquisition of fluent word recognition skills', thus relating to the group's being poor readers.

On individual tasks in Bahasa Melayu, syllabic awareness was the easiest task for both groups. The deletion and isolation as well as the phonemic segmentation tasks were difficult tasks. Similar findings in several studies report that phonemic segmentation is among the most difficult of phonological awareness tasks (Cisero and Royer, 1995; Stahl and Murray, 1994). This could be due to the demand of the task which requires higher phonological processing ability.

The groups' performance on phonological awareness tasks in English indicated differences in the pattern of responding to the tasks. The bilingual good readers showed more inclination towards showing a similar pattern of task difficulties found in Stahl and Murray's (1994) study. Stahl and Murray found that isolation tasks were easiest and phonemic segmentation the most difficult task. Such similarities could mean that where language is concerned, in this case, English, performance in phonological awareness tasks may be similar despite the participants being in a different locality and having a different other-language, in this case, Bahasa Melayu. The bilingual poor readers had a different order of task difficulty and this could be due to differences in performance on the tasks by the group.

Across the two languages, Bahasa Melayu and English, the bilingual good readers showed an almost similar response pattern of performance on tasks. The bilingual poor readers, however, performed quantitatively differently on the tasks across languages. A possible explanation could the difference in the phonological structure of the languages, in this case, Bahasa Melayu and English. Thus, differences might be due to the fact that Bahasa Melayu was the participants' mother tongue and English the second language. The bilingual poor readers might have had limited understanding of the phonological structure of English but this was not so in the case of the bilingual good readers. It is noted that there was one common feature in the responses to phonological awareness tasks among the groups, the bilingual

good readers and the bilingual poor readers. Both groups responded less in terms of the differences in language and more according to the levels of difficulty of the tasks.

CONCLUSION

This paper has presented a descriptions of the performance of bilingual good readers and bilingual poor readers on phonological awareness tasks. The findings showed some differences between the good readers and the poor readers. The bilingual good readers showed highest performance on tasks. Their high mean scores indicates the possibility this group has good phonological awareness skills. The bilingual poor readers, however, showed lower performance on tasks. The differences in mean scores supported this. It is hoped that the findings reported in this paper contribute to the existing knowledge on phonological awareness. It is also hoped that bigger and in-depth studies relating to phonological awareness can be carried out, specifically relating to the different languages and different aspects of difficulties experienced by children.

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* Samples of tasks:

a. Syllabic segmentation

I will say a word and I will clap as it sounds. Like this, red (clap once) , many (clap twice). Now I will say a word and I want you to clap after you have heard it. Yes. Hello. Papaya.

b. Judging alliteration

Listen to this, pin-pet, tin-tap. They have the same first sound. Now, I will say a word and I want you to choose another word that has the same first sound. Tip.. Fit.. Tick.