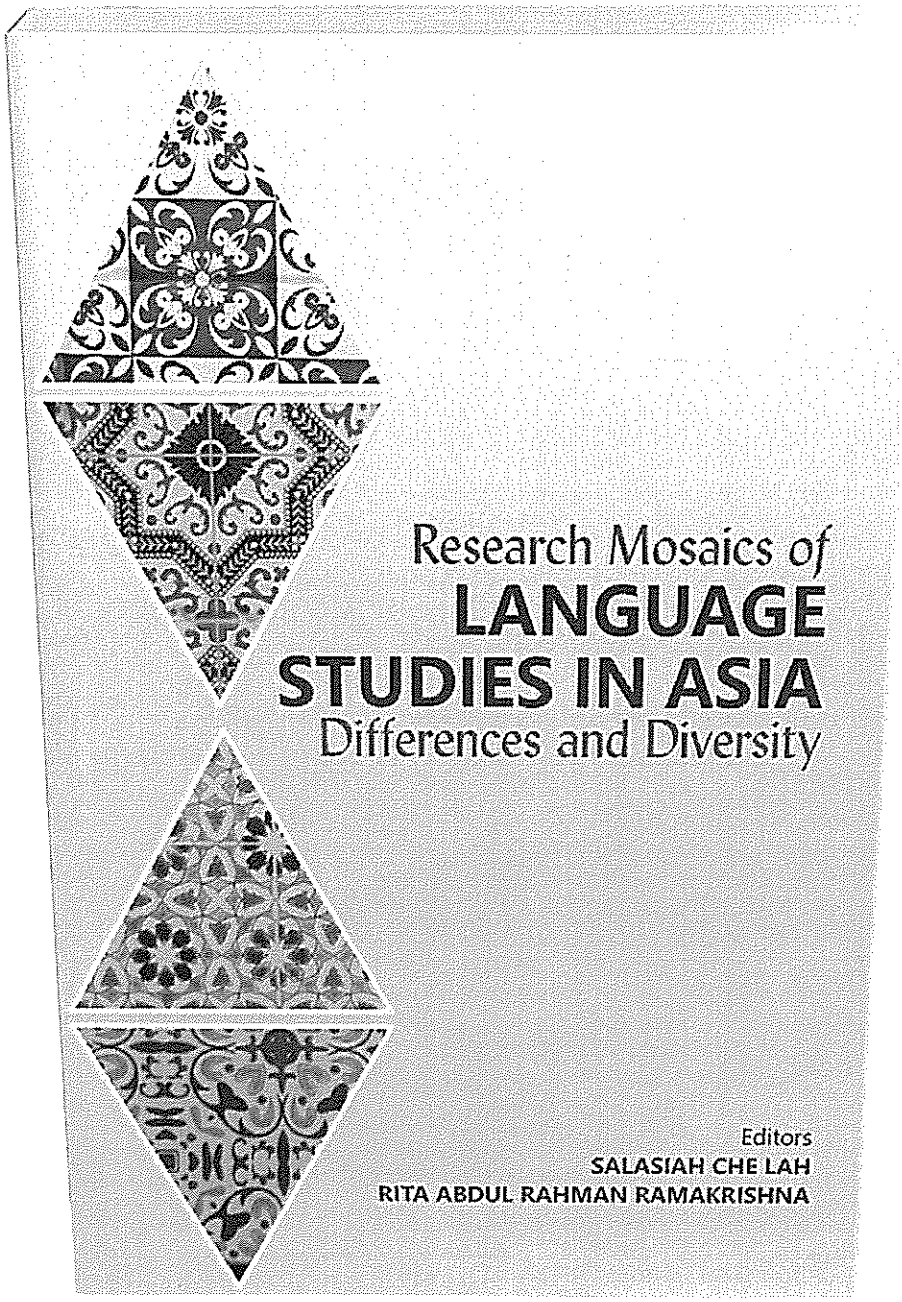
Research Mosaics of
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Differences and Diversity
Editors
SALASIAH CHE LAH
RITA ABDUL RAHMAN RAMAKRISHNA

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RESEARCH MOSAICS OF LANGUAGE STUDIES IN ASIA

Differences and Diversity

Editors

Salasiah Che Lah

Rita Abdul Rahman Ramakrishna

PENERBIT UGM

Translation (TESL), B.A. (Hons.) in English Language and Literature Studies, M.A. and Ph.D in Applied Linguistics from Universiti Sains Malaysia. She has a broad teaching experience of 18 years in secondary schools prior to joining Universiti Sains Malaysia in 2014. Her research interests include English Language Teaching (ELT), Literacy (Multiliteracies, Multimodality, New Literacies) and Writing. She does consultancy work for various government and nongovernment organisations, assumes the role of an editor for various international and national journals and has also served in various international and national conference committees too.

Maya Khemlani David is an Honorary Fellow of the Chartered Institute of Linguists, United Kingdom, a Member of the International Advisory Board of Linguapax, an Honorary Fellow of the Foundation of Endangered Languages (FEL) and is currently Adjunct Professor, Jaipuria Institute of Management, Lucknow. She was, until recently, Professor of Sociolinguistics in the Faculty of Languages and Linguistics, University of Malaya and is currently Hon. Academic Consultant to the London College of Clinical Hypnosis (Asia) and Research Associate with AEI, University of Malaya. She won The Linguapax Award in 2007 following in the footsteps of eminent sociolinguists like Joshua Fishman and has published widely.

Melike Ünal Gezer is an Assistant Prof. Dr. in English Language Teaching at TED University, Ankara, Turkey. Dr. Ünal Gezer has publications in second language literacy development, metalinguistic knowledge, and bilingual development. Her research interests are language teacher education, second/foreign language literacy education, and foreign language education policy. Contact information Asst. Prof. Dr. Melike Ünal Gezer TED University, Faculty of Education, Department of English Language Teaching, Kolej Ankara, Turkey.

Misarah Zreagat was a PhD student at the English Language Studies Section, Universiti Sains Malaysia. He completed his Master degree in Linguistics and English Language Studies from the same university. Mr. Zreagat has been teaching English in schools, language centres and universities for the past 10 years.

Mostafa Bahraman is from Iran. He is a part-time lecturer at Islamic Azad University and a PhD candidate in translation studies at University Sains Malaysia.

Nawal Fadhil Abbas got her PhD in English Language and Linguistics in 2014 from the school of Humanities, University of Sains Malaysia. Now, she is an assistant professor teaching at the College of Education for Women, University of Baghdad. Her field of study is Semantics and Pragmatics. Other fields of interest include Critical Discourse Stylistics and Corpus Linguistics.

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Bilingual Kindergartners' Television Viewing and Language Strengths: A Mixed Methods Study in Singapore

Shuang Wu • Tracy E. Collins • L. Quentin Dixon • Tim Walters • Melike Unal Gezer • Lynne Walters

Introduction

With increasing television usage in homes, educationalists, psychologists and pediatricians have become more concerned with the impact of children's television viewing on children's cognitive, physical, and emotional development (Wartella, Richert & Robb, 2010; Zimmerman & Christakis, 2005). Many studies indicate that television viewing can have a positive influence on children's language and literacy development (Linebarger et al., 2004; Rice et al., 1990; Rice & Woodsmall, 1988; Roseberry et al., 2009). Most of this research, however, has focused on monolingual children's television viewing (Linebarger et al., 2004), or effects of certain educational television programmes, like *Sesame Street* (see two meta-analyses: Fisch, Truglio & Cole, 1999; Mares & Pan, 2013) and *Between the Lions* (Linebarger et al., 2004). Comparatively, only a small number of studies have examined television viewing's impact on children's language and literacy development in bilingual or foreign language learning contexts (Blosser, 1988; Koolstra & Beentjes, 1999; Uchikoshi, 2006a; 2006b).

Some television viewing studies also focused on parental attitudes towards television and mediation of children's television use (Hesketh et al., 2007; Ikeda, 1992; Lee, Bartolic & Vandewater, 2009; Rice & Woodsmall, 1988; Warren, Gerke & Kelly, 2002). Rice and Woodsmall (1988) highlighted the importance of parental support for television viewing: "when embedded in supportive parental interactions, educational television viewing appears to be a situation well suited to language acquisition" (p. 421). Again, however, the majority of these parent-involved studies were conducted in monolingual contexts.

Because many children in the world today grow up in bilingual or multilingual contexts, it is important to examine the role of television viewing in the language and literacy development of children in these contexts. Given the current literature gap, we conducted this pilot study in Singapore, a multilingual country where children experience different levels of exposure to two or more languages in their home and society. The purpose of our study is, therefore, to investigate how young bilinguals' television viewing activities might be related to their language proficiencies in their two languages.

Researchers have been analysing children's television viewing (including the possible outcomes of that viewing) within the scope of three major theoretical frameworks. The first framework, the active viewing model, posits that a child actively engages with and processes the content conveyed through television programmes (Anderson & Lorch, 1983; Bickham, Wright, & Huston, 2001; Huston & Wright, 1998). The active viewing model contrasts with the long-predominant passive model: proponents of the passive model argued that television viewing causes passivity because the attractiveness of the talking, moving pictures demand and hold a child's thoughtless attention for a long time (Beentjes & van der Voort, 1988; Shaughnessy, 1994). From the active viewing theoretical viewpoint, however, children apply strategies to decide whether to view at any given moment and actively work to make sense of input from television (Bickham et al., 2001).

The second theoretical framework, a sociocultural perspective, depicts television as a 'cultural tool' that can influence the development of children's skills and attitudes (Moses & Duke, 2008). Based on Vygotsky's (1978) view of child development, the sociocultural perspective contends that as a part of most children's daily life, television viewing is bound to impact children's development, because such literacy skills are developed within the social worlds of children (Moses & Duke, 2008). In general, the sociocultural perspective emphasises the potential benefits that television can bring to children's development, especially for children who are trying to learn a second language (Perry & Moses, 2011).

The third theoretical framework, the emergent literacy perspective, is closely associated with sociocultural theory (Moses & Duke, 2008). This perspective suggests that home-based literacy practices provide the base for early literacy-related attitudes and beliefs. In the case of television viewing at home, the televised print literacy incidences could function as a means of comprehending print literacy and using this new knowledge in print interactions (Dyson, 2003). As Moses and Duke (2008) claimed: "what children see and hear on television may be internalised into their own understanding of literacy" (p. 256).

These three theoretical models or perspectives provide justification for our interest in the influence of television viewing on multilingual oral and literacy development of Singaporean children. Despite possible negative consequences of television viewing (Postman, 1994; Winn, 2002), more researchers have come to realise that television viewing may supplement linguistic input gained through face-to-face encounters, as "an appropriate combination of television and print produces opportunities for enhancing literacy experiences and outcomes" (Linebarger, 2001: p. 288). In the next section, we review the relevant literature regarding the effects of television viewing on children's literacy and oral vocabulary development in their first and second languages.

Literature Review

For young language learners, television viewing is an enjoyable and indispensable source of informal learning. Qualitative researchers have documented how families, both immigrant and non-immigrant, took advantage of television programs to facilitate their children's literacy learning (Ikeda, 1992; Perry & Moses, 2011; Saracho & Shirakawa, 2004). In terms of specific language skills, most of the relevant studies indicate positive influences of television viewing on children's vocabulary (Rice & Woodsmall, 1988), reading skills (Zimmerman & Christakis, 2005), oral skills (Uchikoshi, 2005), and writing skills (Harrett & Benjamin, 2009) in their first and second languages.

Television viewing and vocabulary

Of many things that television programmes can teach children, vocabulary seems to be most accepted. Studies with monolingual children showed that preschool children could 'fast-map' new vocabulary words from television presentation (Rice & Woodsmall, 1988). In Rice and Woodsmall's words, fast-mapping refers to a "quick, initial partial understanding of a word's meaning involving a restructuring of the lexicon and restructuring of the underlying conceptual

domain, that can be accomplished on the basis of a single exposure" (1988: p. 421). Subsequent studies took into consideration the long-term impact on vocabulary acquisition and parental involvement (Rice et al., 1990; Roseberry et al., 2009). According to Rice et al. (1990), positive effects of *Sesame Street* viewing on vocabulary development were observed among 3- to 5-year-olds, but this beneficial effect of the programme wore off as the children grew older. For children aged 3 to 4, parents' co-viewing and parent-child interaction during viewing time were found to be beneficial for children's learning of new words (Roseberry et al., 2009).

Television viewing may also exert a positive impact on second language learners' vocabulary development. One of the earliest empirical studies indicated a moderate, positive relationship between television viewing and vocabulary development for Mexican-American and Puerto Rican-American children in Chicago (Blosser, 1988). According to Blosser (1988), television viewing might be more beneficial for non-native speakers of English compared to monolingual English-speaking children because television viewing provided a role model for language and behaviour when the "socialising agents [i.e., parents] are not available to provide them" (p. 23). Uchikoshi (2006a) also supported the facilitative role of television viewing in vocabulary development: among Spanish-English bilingual kindergartners, those who viewed the educational television programmes *Arthur* and *Between the Lions* at home increased their English language vocabulary at a faster rate than those who did not.

Even in a foreign language context, television viewing can serve educational purposes. With a sample of Dutch 4th and 6th graders, Koolstra and Beentjes (1999) found that these English learning children were able to learn English vocabulary through exposure to English language television. Moreover, their vocabulary could grow even faster when the English soundtrack was accompanied by Dutch subtitles.

Television viewing and reading

Some longitudinal studies revealed the possibility that the amount of television viewing time, viewer's age and programme genre might mediate the relationship between television viewing and reading achievement (Ennemoser & Schneider, 2007; Linebarger, 2001; Linebarger et al., 2004). For example, focusing on the long-term effects of television viewing on the development of reading, Ennemoser and Schneider (2007) conducted a four-year study with native German-speaking 6- and 8-year-olds (N = 322). In their study, educational programme viewing generally had a positive impact on the children's reading

speed and comprehension, whereas entertainment programme viewing was significantly negatively correlated with these children's reading performance. Ennemoser and Schneider (2007) also found that compared to light and medium viewers (with average viewing time of 35 to 69 mins per day), heavy television viewers (with average viewing time of 117 mins per day) tended to be slower readers. Moreover, the heavy viewers' reading performance continued to lag further behind the light and medium viewers over the next three years. Wright et al. (2001) reported similar findings in their longitudinal study of 2- and 4- year-old native English and English-as-second-language children in Kansas, USA: when controlling home environment quality and first language background, time spent on viewing informative and educational programmes between ages 2 and 3 could predict these children's later reading skills and vocabulary size. More interestingly, Wright et al. (2001) proposed a bidirectional model, supporting the claim that though programme genres can decide the relations of early television viewing to literacy skills among very young viewers, older children's literacy skill levels can also help explain the children's different choices of programme genres.

There seems to be disagreement, however, on at what age young viewers might make literacy gains from television viewing. While some researchers emphasised the benefits of starting educational television viewing between ages 2 and 3 (Wright et al., 2001), others argued for deleterious effects of television viewing before age 3 on reading and comprehension (Zimmerman & Christakis, 2005). In fact, these contradictory findings may be partly attributable to different participants and measures in the studies. For example, using a US national longitudinal survey, Zimmerman and Christakis (2005) examined the effects of general television viewing on cognitive outcomes, whereas Wright et al. (2001) adopted the measure of time-use diaries and focused on differentiating the effects of program genres on reading performance among the children in Kansas, USA.

Television viewing and oral skills

Exposure to educational programs enables children to improve their oral skills with enhanced expressive vocabularies (Linebarger, 2006; Linebarger & Walker, 2005). Based on a series of studies conducted by Linebarger (2006) and colleagues (Linebarger & Walker, 2005), the nature of the relationship between young children's television viewing and their oral language outcomes depended on the characteristics of the programmes. Linebarger (2006) showed 16 episodes of an educational television series *Between the Lions* to 745 native American children attending Head Start programmes. The findings suggested positive literacy outcomes with gains in oral vocabulary, letter knowledge, and phonemic

awareness. Compared to their peers who normally learned 0.44 words/month, the children in this study acquired 2.09 words for each intervention session. However, when comparing the impact of several educational programmes among infants and toddlers, Linebarger and Walker (2005) found that due to differences in narrative structure, language models, and even visual representations, these programmes helped the children develop their vocabulary and expressive language skills to varying degrees.

More opportunities for oral communication is the other resource that television viewing offers for language learning (Crawley et al., 2002). Repetitive viewing of the same episode may increase viewers' interactional participation, giving them more opportunities to orally practice what they learn from the programmes. When the children understand the content of the programmes after repeated viewing, they are more likely to reflect on their learning by discussing the content with co-viewers, or verbally responding to questions in the programmes (Anderson, et al., 2000; Crawley et al., 1999; Crawley et al., 2002).

Television viewing can play a facilitative role in developing bilingual children's and child foreign language learners' oral skills as well. In Uchikoshi's study (2005), 108 Spanish-English bilingual kindergartners were randomly assigned to watch either the narrative programme *Arthur* or the literacy programme *Between the Lions*. By the end of one academic year, the two groups differed in both behaviour and oral language proficiency. The *Arthur* group became more actively engaged in post-viewing peer discussion about plot and character. Moreover, the *Arthur* viewers not only demonstrated their familiarity with mainstream narrative styles, but also developed their narrative skills at a faster rate than the other viewing group. Similarly, for children learning English as a foreign language, considerable amounts of television viewing made incidental language acquisition possible. In a study of Dutch-speaking pupils, sufficient media exposure in English including frequent watching of subtitled television programmes was strongly related to their better performance on oral translation tests (Kuppens, 2010).

Television viewing and writing

Very few studies to date have been conducted to investigate the relationship between television viewing and viewers' writing development (Dyson, 1997, 1999; Williams, 2002, 2003). Of the few, none quantitatively measured viewers' writing development after television viewing. Instead, the existing studies focused on how television viewing could boost writing motivation or awareness of writing conventions (Dyson, 1999; Harrett & Benjamin, 2009). For example,

in a synthesis article, Williams (2003) focused on the possibility that primary school students can learn to apply to their writing "sophisticated senses of audience and genre" acquired from their television viewing (p. 551). Harrett and Benjamin (2009) rFeported a literacy-development project in which the teachers integrated guided television programme viewing into school curriculum. As a result, the participating students displayed enthusiasm with writing assignments in class, yet still voiced their dislike for writing. Given the scarcity of the literature, more studies need to be conducted for a fuller understanding of the relationship between television viewing and viewers' writing skills.

Parental attitudes towards and involvement in television viewing

Parents hold positive attitudes towards television viewing when they recognise television as a valuable tool for their young children to learn language and culture. Take American parents as an example. According to the recent Kaiser Family Foundation report in the United States, 42% of parents believed in the beneficial role of television viewing on children's learning, and 58% of parents stated that television aided children's intellectual development (Rideout & Hamet, 2006). Additional anecdotal findings of this report suggested parental satisfaction with animation videos, cartoons and educational shows that teaching children how to count numbers, spell sight words, even learn another language such as Spanish (e.g., by viewing *Dora*). On the other hand, in other contexts such as China, parents did not express positive attitudes towards television viewing, because they did not regard television viewing as "a serious instrument for education" (Zhao & Hao, 2004: p. 74).

Studies have suggested a dynamic interaction between parental television attitudes, parental involvement in their children's television viewing, and effects of television viewing. The findings of these studies were similar to each other: parents with negative television attitudes tended to restrict children's viewing time and viewing content, or provide viewing guidance during co-viewing with children (Warren et al., 2002; Zhao & Hao, 2004). Parents' participation in television viewing, such as co-viewing, in turn, may account for positive effects found for television viewing on children's cognitive development (Zhao & Hao, 2004). Rice et al.'s longitudinal study (1990) also supported this directional relationship between parental attitudes, parental involvement and effects of television viewing. In their study, controlling for parental education and actual *Sesame Street* viewing time, positive parental attitudes towards television, and encouragement of *Sesame Street* viewing had negative correlations with children's vocabulary scores. Rice et al.'s longitudinal study (1990) interpreted

this finding as suggesting that parents with more positive attitudes towards television may engage less with their children in viewing activities, thus preventing the children from taking fullest advantage of television viewing.

In summary, the studies reviewed above generally indicate a growing interest in the linguistic impact of television viewing on young viewers across contexts. Overall, researchers agree that television viewing can be beneficial to children's literacy development, i.e., vocabulary, reading, oral skills, and writing. However, we also notice the need for more studies focusing on diverse language skills, different populations, or different contexts.

The context of the study: Singapore

To contextualise the current study, in this section we mainly provide a brief introduction to educational television programmes in Singapore, demographic and linguistic information about Singapore, as well as relevant studies in Singapore.

Demographic and linguistic background

Singapore is a multiethnic and multilingual society. According to the CIA (2014) The World Fact Book, Singapore is comprised of 74.2% Chinese, 13.3% Malay, 9.2% Indian and 3.3% of other ethnic origins in an overall population of about 5.5 million. English, Chinese, Malay and Tamil have been designated as the official languages of Singapore. English serves as the main language for education, administration and international trade. For example, in the field of education, Singaporean students learn subject matter (e.g. science, geography) through English, while learning their official mother tongue (Chinese, Malay or Tamil) in a required language class (Dixon, 2005). At home, the usage of English as home language has been increasing over the years. As of 2010, among Singapore residents aged 5 years and above, 33% of the Chinese, 17% of the Malays, and 42% of the Indians used English as the main home language (Department of Statistics Singapore, 2011). The other three official languages, Chinese, Malay and Tamil, are spoken as the main home language by 48%, 83% and 37% of each ethnic population, respectively (Department of Statistics Singapore, 2011). Languages without official status, however, are gradually losing popularity as the home language. For example, in 2010, a Chinese dialect such as Hokkien, Cantonese or Teochew was the home language for just 19% of Chinese aged 5 and above, down from 31% in 2000 (Department of Statistics Singapore, 2011).

Singapore has made exceptional achievement in terms of language education. Among residents aged 15 and above, 80% were literate in English, and 71% literate in two or more languages in the most recent census (Department of Statistics Singapore, 2011). Even though most Singaporean students were schooled in the non-native language, English, their performance on science, math, and reading tests in English far exceeded those of their peers from English-speaking countries (Dixon, 2005; Mullis et al., 2000; Mullis et al., 2003; PISA, 2009).

Educational television programmes in Singapore

Because of the existing unique ethnic characteristics of Singapore, "television, as a popular and powerful medium of mass communication, has a significant role to play" in unifying the peoples of Singapore and in popularising literacy attainment amongst young learners (Kuo, 1984: p. 50). Despite their merging, changing and replacement, the major television networks in Singapore have been committed to this educating role for years.

MediaCorp programming

MediaCorp is currently the largest media broadcaster and provider in Singapore. In October 2008, MediaCorp launched Okto, the most popular educational and entertainment channel for young audience (Asian Content Watch, 2009). Each week, Okto partitions its weekly 105 air hours into blocks for audiences of different ages: 9 am–3 pm is reserved for preschoolers, 3 pm–9 pm runs for kids and families and 9 pm–midnight targets teenagers and adults. Overall, Okto's programming is mostly for children: each week, 30 hours of preschool content is broadcast (such as *Barney and Friends* and *Sesame Street*), followed by 25.5 hours of animation. Additional categories include somewhat informative entertainment for13.5 hours, factual programmes for 9.5 hours, drama for 8.5 hours, classical performance/arts for 5.5 hours, movies for 5.5 hours, lifestyle for 5 hours, and anime series for 2 hours (Asian Content Watch, 2009). Though predominantly in English, Okto also broadcasts selected imported programmes in their original languages, such as well-known films from around the world (Asian Content Watch, 2009).

Television viewing studies in Singapore

With its bilingual and multilingual setting, Singapore offers a unique opportunity for research on children's television viewing. However, to our knowledge, only a few studies examined the relationship between Singaporean children's television

viewing and their literacy development. These studies have drawn similar conclusions concerning the positive impact of television viewing on children's language development: combined with some home background factors such as family income, parental education, and language use at home, television viewing may facilitate young children's literacy development.

For example, in an examination of the home environment of competent bilingual Chinese kindergartners, Sharpe (1997) reported, in addition to varied parental support, the majority of these children also watched television in both languages on a regular basis. In Dixon's (2011) study of variables impacting Singaporean children's English vocabulary knowledge, television language, significantly predicted the 284 Singaporean kindergarten children's English vocabulary. More specifically, children who only or mostly watched television in English scored higher on English vocabulary compared to those who mostly watched television programmes in other languages, after controlling for background variables.

Research Questions

Given the scarcity of the relevant studies in the Singaporean context, we are interested in explicitly addressing the role of television viewing in Singaporean children's literacy development. Therefore, we have four major research questions:

1. What are these Singaporean children's overall language strengths?
2. How does a Singaporean child's best spoken and written languages relate to the mother's and father's best spoken and written languages?
3. How do a Singaporean child's best spoken and written languages correspond to the language of the programmes the child viewed most on television?
4. Do Singaporean parents regard television as an educational tool for their children? If so, in what ways do they use television as an educational tool, what do they consider educational content on television, and what specific programmes do they consider educational?

Materials and Methods

Research design

In order to best understand the research questions, we implemented a converge design: concurrently collecting and analysing both qualitative and quantitati data, and integrating the two sets of results into an overall discussion. T advantage of such a convergent design is to "obtain different but complementa data on the same topic" (Morse, 1991: p: 122).

Participants

For this pilot study, we focused on children in the second year of kindergarte who were to start the first grade of formal government-provided schooling t following year. In four kindergarten centres, we distributed the surveys to t second-year kindergarteners' parents. With an overall response rate of 15 44 parents returned the survey forms. After excluding the two respondents wl were not from one of the major ethnic groups in Singapore, we had a final samp of 42 respondents.

Measures

By adapting from Rickard Liow and Poon's (1998) and Nakamura's (200 questionnaires, we developed a 53-questions survey. This parent survey consist of three sections: children's language use at home and language strengths, hon literacy activities, and parents' personal background and language proficiency. (primary research interest were responses regarding the following topics:

Child's language proficiency

Parental report of children's language proficiency may not be accurate, especial in a language in which the parents themselves are less proficient. Howeve parents may be more able to determine their child's relative proficiency different languages, especially in specific skills such as speaking and writin Therefore, in the questionnaire, we asked the parents to rank their child language abilities in speaking and writing as first-best, second-best, and thir best (when applicable). Using Likert scales, we also inquired about the parent satisfaction with their child's language skills.

Home language environment

Parents reported the language(s) that they and the child's primary caretakers used with the child. Additionally, the parents provided some personal background information, such as family income, parents' educational background, and parents' language proficiency.

Television viewing

Parents reported the frequency of television watching, total number of television hours, types of favourite television programmes, and the languages of the programmes. The parents also answered four open-ended questions concerning their attitude towards the educational function of television viewing, and whether they set any limits on children's television watching.

1. In what ways do you feel television is an education tool for your child?
2. What behaviours in your child do you feel are related to watching television?
3. Do you set limits on the amount of television your child watches and why?
4. Do you set limits on the type of television your child watches and why?

Analysis

Quantitative data

We quantitatively analysed the numeric data from the questionnaire. First, we summarised the sample with descriptive statistics. Then, by cross-tabulating the parents' responses to the relevant questions, we were able to display the frequency distribution of the variables – children's and parents' language proficiency, children's amount of television viewing in English and/or their mother tongue.

Qualitative data

We intended to understand participant experiences through what these experiences meant to the participants (Denzin & Lincoln, 2005). Therefore, first, we placed all the responses to the open-ended questions on individual index cards. Then, we grouped these responses according to themes that stemmed

from the questions, and further divided the themes into various categories based on the similarity of responses. Most importantly, to maintain themes and expressions in their original state, our research team developed our themes and categories directly from our respondents' open-ended answers. For example the question 'Why is it important for your child to be able to speak English?' elicited 36 responses with references to English being an international/global or common language. 'International language' thus became a category with answers including: "English is an international language"; "English is a common language used in most countries" and "English is a global language that connects and unites people". Under the same theme, the other emerging category was "educational language", as the respondents phrased "English is the first language of Singapore as well as in school …", "important language for learning" and "requirement for school" (Figure 1).

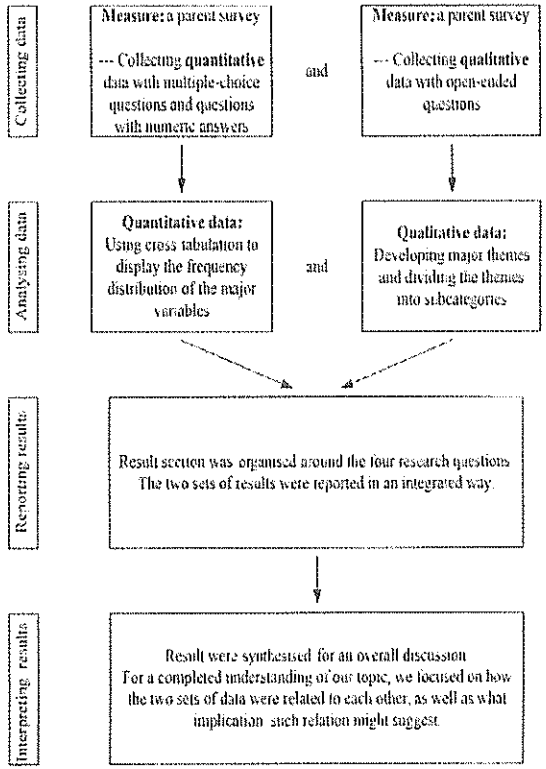

Figure 1 Flowchart of the four procedures for this study with a convergent design
Source: Creswell and Clark (2011: p. 79)

In the few situations where we were unable to read or determine a participant's response, we excluded the data from our analysis. Nevertheless, despite our significant efforts in remaining objective, we were still aware that reflexivity (i.e., the influence of the researchers on the research process, due to the researchers' background, position, etc.) was still likely to affect our interpretation of the data (Miles & Huberman, 1994).

Results and Discussion

Results

Demographics

The resulting sample consisted of the parents of 33 Chinese and 9 Malay children. Except for one child whose parent did not report country of birth, 37 children were born in Singapore; the remaining four children immigrated from China, Canada, or Malaysia. The children's ages ranged from 4 to 6, with the majority being 5 years old.

We dropped six Chinese respondents from the income analysis, because they left the question of "family income" blank. For our whole sample, family income ranged widely from SGD$350 (Singapore dollars) per month to SGD18,007 per month. Eleven percent of the families in the sample reported earning less than SGD$2,000 per month; 19% reported family income of SGD10,000 and above. More than half of the Chinese families reported incomes of incomes of SGD8,000 or more, whereas 22% of the Malay families fell into this range (Figure 2).

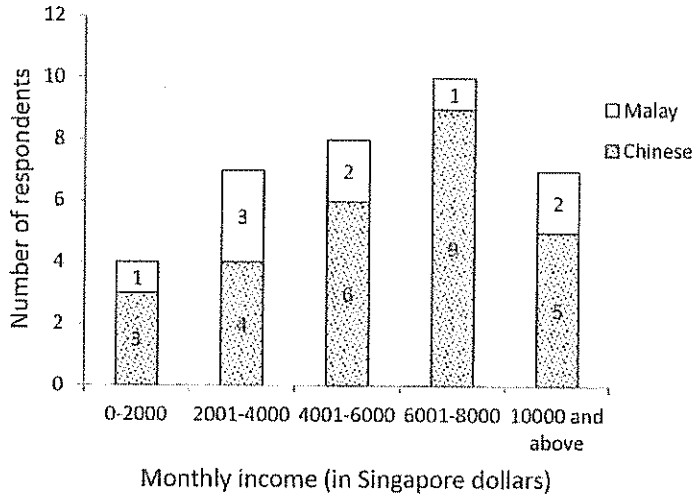

Figure 2 Family income of the respondents (n = 36)

For the children in our sample, about 62% of their mothers and 64% of their fathers were born in Singapore. Years of formal parental education ranged from 0 to 23. Mean years of education were similar for mothers (M = 13.6, SD = 3.96) and fathers (M = 14.8, SD = 4.15). Similar percentages of the mothers and fathers were instructed in Chinese (around 26%), English (around 62%), and in both languages (around 5%) (Figures 3 and 4).

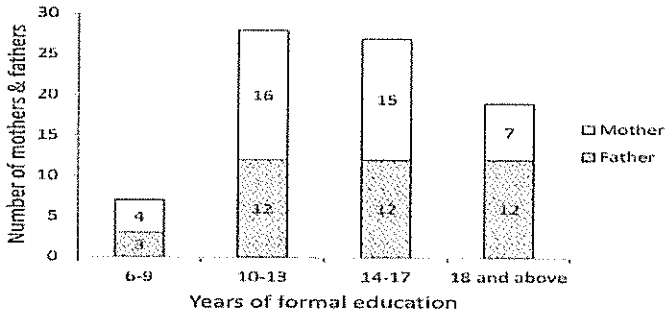

Figure 3 Parents' years of formal education

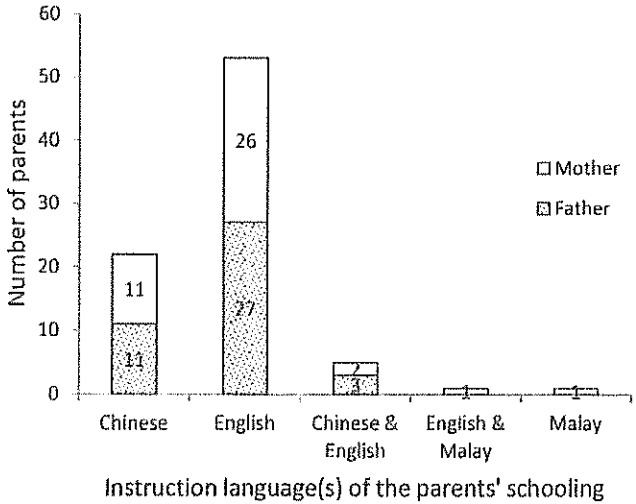

Figure 4 Main medium of instruction of the parents' schooling

Children's language proficiency

In the questionnaire, the parents ranked their child's relative writing and speaking proficiency in English, Mandarin, Malay, Chinese dialect and other possible languages: 1 for best, 2 for the second best, and 3 for third best. Overall, these bilingual children tended to speak their ethnic language better, but write better in English.

In terms of spoken language(s), exactly half of the children were more proficient in their ethnic language than in English. About 38% of the children spoke English better. The remaining 12% of the children were equally proficient in both English and their ethnic language. When examining these children by their ethnic group, we found no Malay children demonstrated balanced oral proficiency in English and Malay. Instead, approximately half of the Malay children spoke better in English, whereas the other half spoke better in Malay. As for the Chinese group, their relative strength in oral Chinese was slightly more noticeable. Moreover, a small portion of the Chinese children (about 16% of the total) seemed to be developing their oral proficiency simultaneously in two languages (Figure 5).

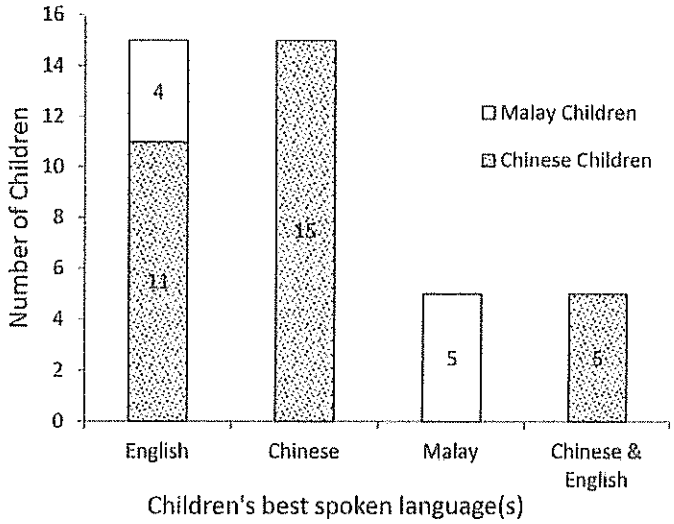

Figure 5 Children's best spoken language(s)

Regarding the ability to write, these children predominantly wrote better in English than in their ethnic language, with the percentage as high as 67% of children reported to be better at English writing. All but one Malay child wrote better in English. Almost 60% of the Chinese children displayed more strength in English writing. Only around 13% of the Chinese children developed equal writing.

Home language environment

The three main categories of primary caretakers were grandparents (33% of the total), mothers (31%), and domestic workers (17%). Of those who spoke Chinese dialects (other than Mandarin Chinese) to the children, the grandparents constituted 62%. For the majority of the families, the parents (one parent or two parents) were mainly responsible for speaking and reading in English to the child.

Overall, for both the Chinese and Malay groups, more than half of the parents spoke better in their ethnic language. However, in writing, these parents did not show the same advantage with their ethnic language. Instead, approximately half of them wrote better in English, the other half better in ethnic language. To be more specific, except one Malay father (in speaking) and one Chinese mother (in writing), none of the parents reported equal proficiency in two languages. In total, 68% of the mothers and 65% of the fathers were better at speaking their

ethnic language. In terms of writing proficiency, there were equal numbers of the Chinese parents who had higher writing proficiency either in Chinese or English. Meanwhile, the Malay parents also displayed the same tendency: half better at English writing and half better at Malay writing.

Our bivariate cross-tabulation revealed a strong correspondence between the child's most proficient written and spoken language(s) and mother's/father's most proficient language(s), especially with the Chinese language (Figures 6, 7 & 8).

For example, most of the children with higher oral/writing proficiency in Chinese came from the families where the parents showed their relatively higher language strength in Chinese as well. Interestingly, however, the children with higher English proficiency in speaking and writing might not always have the parents with higher English proficiency: instead 30% to 46% of their parents claimed to be better at Mandarin Chinese, Malay, or even a Chinese dialect (e.g., Cantonese, Hokkien, or Teochew).

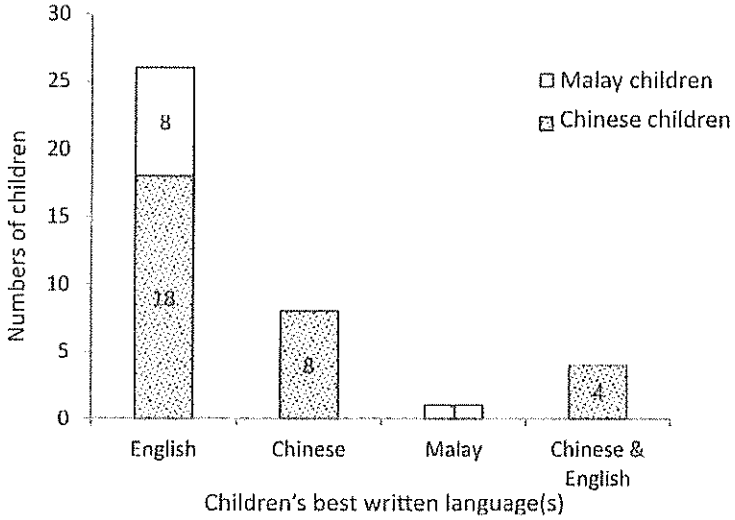

Figure 6 Children's best written language(s)

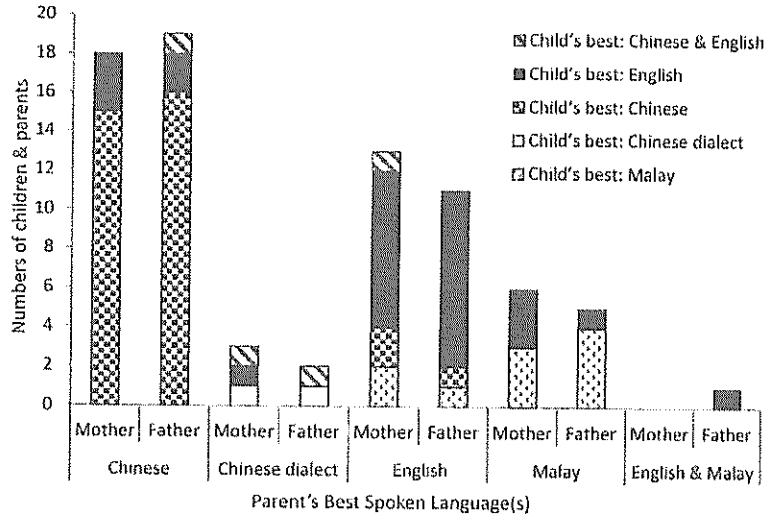

Figure 7 Cross-tabulations of children's and parents' best spoken language(s)

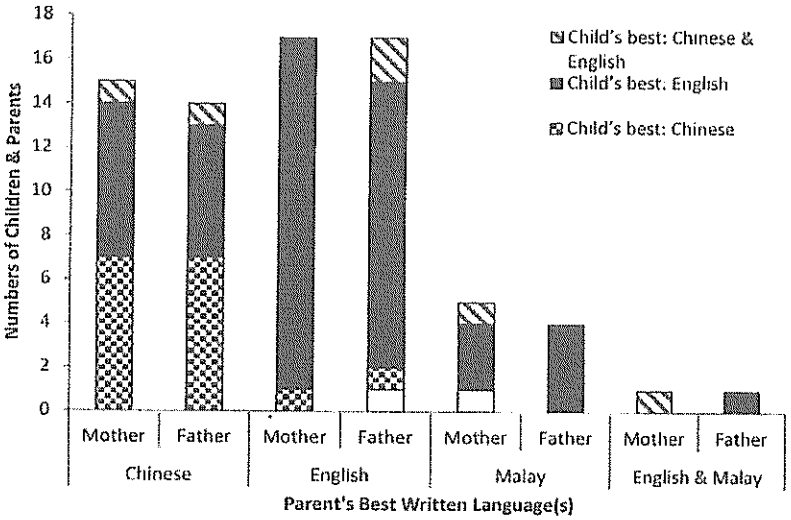

Figure 8 Cross-tabulations of children's and parents' best spoken language(s)

Note: We removed from our analysis the respondents who did not provide information concerning their own or their spouse's language proficiency.

Television viewing

Of the 42 families, two families reported no television sets in the household. Two families, both of whom reported having one television set and mentioned that the child watched only two or three times a week, did not report the child's daily viewing hours. Therefore, we removed these four families, which resulted in the final sample size of 38. In addition, we kept for the analysis one family who reported no television sets in the household, because this family reported the child watched television programmes on a daily basis (perhaps at a caretaker's home).

On average, each family had two television sets and allowed the child to view three hours of television per day. The children in our sample tended to watch more hours of English programmes than ethnic-language programmes. Only three children usually watched television alone. In other words, most of the children watched television in the company of either adults or other children. The number of television sets per household with those having television sets ranged from 1 to 5 ($M = 2.2$, $SD = 1.04$). The reported total daily television hours ranged from 0.25 to 10 ($M=3.5$, $SD= 2.08$): daily English hours ranging from 0 to 6 ($M = 2.3$ $SD = 1.64$), and daily Chinese or Malay hours ranging from 0 to 10 ($M =1.3$, $SD = 1.75$).

Parental perceptions

Though the majority of the parents were positive about the educational benefit of television viewing, a large portion of these parents, driven by their concern with the negative impact of television viewing, also took some precautions against unsupervised or long hours of television viewing. Statistically, about 87% of parents believed that television was an educational tool for their child. About 82% of parents expressed concern that television watching might affect their child's behaviour. About 85% of parents reported limiting television hours; meanwhile, 67% of them limited the types of the television programmes that the child watched.

To further interpret the parents' understanding of television's role in their child's educational development, we looked into parents' responses to the open-ended questions. We categorised the responses to the first question, "In what ways do you feel watching television is an educational tool for your child?" in three main subquestions:

1. Do Singaporean parents use television as an educational tool?
2. What do children learn when television is used as an educational tool?
3. What specific television shows did their children watch?

In responding to whether they saw television as an educational tool, parent frequently responded that television helped their child learn oral and writte language. With themes grouped and divided, our analyses of the response revealed that gaining knowledge, learning new things and exposure to differer subjects became prominent concepts. Of the 24 descriptors used to illustrat television as an education tool, the terms discover, expose, learn, knowledge brings up new subjects, expanding, interesting and captivating mode for teachin and knowledge on things happening around the world came up 19 different time

Another question asked parents what their children learned when television wa used as an educational tool. These responses provided specific examples mainl of learning language and expanding knowledge. Parents commented that childre learn concepts and specifically learn to communicate through and with language including learning to speak and listen, learn new words and how to expres oneself. Parents also indicated that television helps instill interest in gainin knowledge through fun learning mentioning the particular ability to teach caus and effect to children. In addition to an instructional tool, one parent also viewe television programmes as access to new and more varied information through fu learning. One parent even commented that through some shows children wer told to have fun with friends.

Parents labelled a wide range of television shows or types of shows as educationa or providing knowledge. The television shows included Handy Mandy, Dor the Explorer, Sesame Street, Mickey Mouse Club, Playhouse Disney, Hi-5, Mi Maker, Barney, The Pink Panther, Courage the Cowardly Dog, Ben 10, Tom & Jerry, Avatar, Snork, and cartoons in general. Parents also mentioned certain television networks such as the Disney Channel, Cartoon Network, and Okto, a well as documentaries, children's movies and drama series. Positive comment about these programmes included parents stating that children discovered nev things and learned manners (please, thank you, sorry), words, songs and math. I parents' own words, educational television programmes deliver good informatio and entertainment, were positive and constructive, and help with aspects of ora and written language.

Television viewing hours and child's language strength

As two respondents did not rank their children's language strengths on the questionnaires, we further deleted these two, thus reducing the sample size to 36 for the following analyses. Moreover, since only one Chinese parent reported half an hour of Cantonese (a Chinese dialect) viewing, we added this 30 minutes into the child's daily Chinese viewing hours.

We separated the Chinese language group from the Malay group and compared the children's television hours with their language competency. For the Chinese group, the mean of the total television hours was 2.98 (SD = 2.04) per day. For the Malay group, the mean of the total television hours was 4.56 (SD = 1.31).

For the Chinese group, their Chinese viewing activities seemed to correspond with their higher Chinese speaking proficiency, but not necessarily their Chinese writing proficiency (Figure 9). English viewing activities, however, appeared to be related to higher English writing abilities (Figure 10). About 74% of the children who ever watched Chinese programmes (regardless of the number of hours) were better at speaking Chinese, or at lease equally good at speaking English and Chinese. The two children who watched the most Chinese programmes, however, were better at speaking English. Watching the Chinese programmes seemed to be much less related to the children's writing proficiency in Chinese: 56% of the children better at English writing versus 44% better at Chinese writing. We also found English programme watching was not noticeably related to higher English speaking proficiency, as only a few more children spoke English better despite their higher English viewing time. Contrarily, around 72% of the children who watched English programmes had higher writing ability in English.

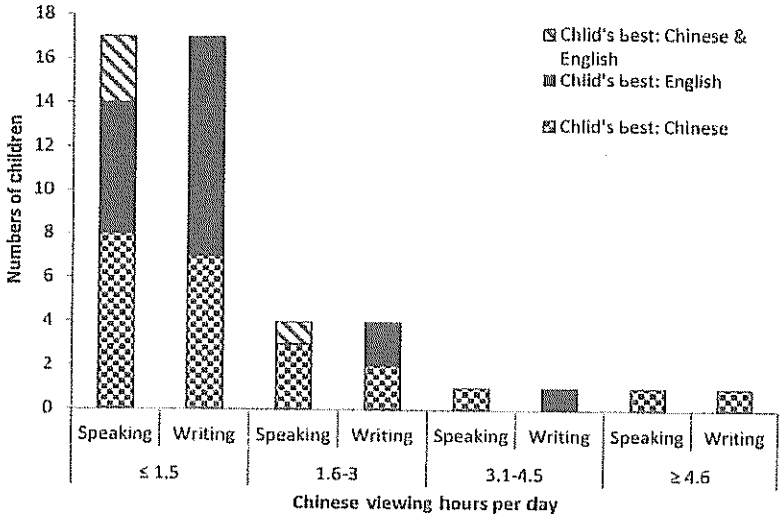

Figure 9 Cross-tabulations of Chinese viewing hours and children's best language(s)

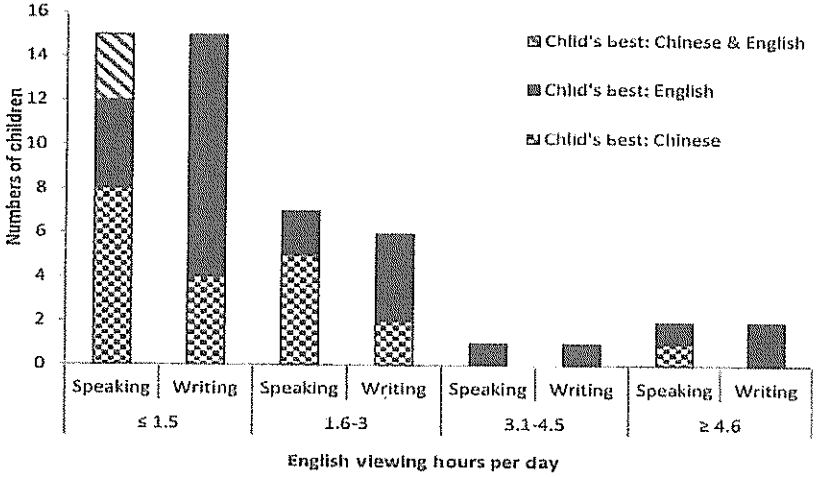

Figure 10 Cross-tabulations of English viewing hours and children's best language(s)

For the Malay group, their longer English viewing hours overlapped with their higher English writing proficiency. However, regardless of the number of their Malay viewing hours, all but one child wrote better in English. All the seven children who watched three or more hours of English programmes per day were reported to write better in English than in Malay. Yet, for speaking proficiency,

we did not find any pattern indicating a connection between English viewing hours and English oral proficiency. On the other hand, the three children who never watched any Malay programmes spoke English better, whereas three out of four children with longer hours of Malay programme viewing spoke Malay better. Similar to the Chinese group, there was no tendency that children watching Malay television programmes were able to write better in Malay.

Discussion

Although television viewing of monolingual children has been extensively researched (Rice et al., 1990), the literature lacks studies conducted with children who grow up in bilingual and multilingual settings. Whereas children in monolingual settings can be assumed to understand the language of the television programmes they view, children in multilingual settings will approach television viewing with varying proficiency in the language of the television programme. It remains questionable, however, whether television viewing can promote these bilingual or multilingual children's language learning. Studying Singaporean children's television viewing thus begins to address a large gap in the research.

Our results provide support for the active viewing model of children's television experience (Bickham et al., 2001), the sociocultural perspective (Moses & Duke, 2008), and the emergent literacy perspective (Dyson, 2003). First, in our study, based on the parents' reflections, television viewing, as one of the common home-based literacy activities, enabled their children to acquire 'new words', and learn to 'express oneself', 'speak and listen', 'gain(ing) knowledge through fun learning'. The possibility of young children's literacy gains from television viewing is in line with what the emergent literacy perspective underlines. Second, considering their growth in literacy and language abilities, these bilingual children seemed to be active participants in the television viewing experience, learning or choosing, rather than passive recipients of images and sounds. The children's apparent active engagement in television viewing in this study suggests the applicability of the active viewing model among bilingual children. Third, our study revealed that parents regarded television as a cultural tool, supporting the sociocultural perspective on television viewing (Moses & Duke, 2008; Perry & Moses, 2011). Parents reported they viewed television as a source of vocabulary and oral language input and emphasised other benefits of children's television programmes, such as learning new information and concepts, reinforcing manners, and building positive social skills.

In our study, only a small portion of parents reported balanced development in their children's speaking and writing abilities in English and ethnic language: overall, these children tended to speak better in ethnic language and write better in English. Children's unbalanced development in bilingual skills suggests that although speaking a language well may provide an advantage to a child trying to learn to read and write in that language, it by no means guarantees that the child will show strength in literacy through that language. One might have expected that this phenomenon would be particularly true for Chinese, because the written language is not alphabetic and therefore does not highlight the sounds of the spoken language; however, this pattern was also evident among Malays in our sample, despite the fact that Malay is a very transparent alphabetic language with an almost one-to-one sound-symbol correspondence (meaning a person who has learned the sound associated with each letter of the alphabet can write any word the person can say).

Similar to earlier research (Blosser, 1988; Linebarger, 2006; Uchikoshi, 2006a; Wright et al., 2001), our findings also showed that bilingual children's varying language strengths in speaking and writing may be partly related to their language exposure at home, like television viewing and parent-child interaction. More specifically, the bilingual children with higher oral proficiency in their ethnic language (Chinese or Malay) tended to watch more television programmes in the same language; whereas those with higher writing proficiency in English watched more hours in English. In addition to the impact of television viewing, we also identified the association between children's language strengths and their parents' language profiles. The children's higher proficiency in speaking and writing tended to reflect their parents' language strengths. Such parent-child language correspondence indicated that interaction with parents remains a strong influence on bilingual children's development of their two languages. Perhaps parents' oral or written proficiency may provide upper limits to their children's development in that language, at least at the early stages before formal schooling takes on a more dominant role.

Despite the children's more noticeable link between literacy and television viewing, we found an intricate relationship between television-viewing hours and the children's oral language learning. First, exposure to television programmes in one's ethnic language may increase the viewer's opportunity of improving oral language proficiency in that language. For example, most of the viewers of Chinese programmes were reported to have higher oral proficiency in Chinese. Moreover, the Malay children with longer hours of Malay programme viewing spoke Malay better. Conversely, the three non-viewers of Malay programmes had better oral English proficiency. However, one interesting finding was that the

two Chinese children who spent the most time watching Chinese programmes were better at speaking English instead of Chinese. Of course, because this is a correlation, it could be that these English-dominant children were being encouraged by their parents to watch more Chinese programmes, with the hope of improving their Chinese proficiency. Another possibility for this exception is, though a moderate amount of television viewing is likely to yield positive outcomes for viewers, excessive viewing may fail to facilitate language learning (Ennemoser & Schneider, 2007). Second, overall, longer English exposure via television viewing was not noticeably associated with children's better oral proficiency in English. As the majority of the children in our sample spoke better in ethnic language than in English, English television viewing did not seem to exert much influence on their oral language development. There might be a couple of reasons: if the whole family communicates in the ethnic language on a daily basis, a relatively small amount of English viewing, even on a daily basis, is unlikely to boost the child's English proficiency. Moreover, according to Wright et al. (2001), older children can match their preferred programmes with their literacy and language levels. Due to their higher oral proficiency in Chinese, they might be able to understand better the programme content, thus internalising more learning in Chinese. On the contrary, learning from English programmes might be more difficult, especially with young bilinguals who displayed weaker oral proficiency in English.

This relationship was not evident between television language and children's writing skills in that language. It seems that in the absence of a specific literacy focus, television may be better suited to building oral language, rather than literacy, skills. This lack of relationship was expected due to the findings of Moses and Duke's (2008) content analysis of the most popular US children's shows: writing was virtually never depicted as part of the storyline. If the exclusion of the writing element is the reason, then children's television programs, especially those with an explicit educational mission, could help promote children's literacy simply by showing characters using writing skills in the course of their everyday lives. For example, characters could be shown authentically using writing to make lists, label containers, compose letters (handwritten or typed on a computer), leave notes with messages for other characters, write reminders for themselves, or record clues or evidence to solve a puzzle or mystery.

Pedagogical Implications and Avenues for Further Research

Our findings suggest that many parents believe television viewing to be a potential tool for learning at home. We believe that if properly used, television or video content, can function as an additional tool for language teaching, in the classroom or at home.

Language teachers can use surveys with parents or students themselves to discover what programmes they are currently viewing in the target language, and plan in-school or homework activities based on some of the programmes' content. For example, teachers could reinforce vocabulary introduced in a television programme. Teachers can use video content in the classroom, or assign watching certain locally-available (or available through the Internet if students have internet access) television programmes as homework. Although watching television unguided may not strengthen children's literacy skills except for certain programmes specifically designed to build literacy, teachers can create literacy activities tied to programme content. If all students watch the same programme, the video can offer a shared context for students to discuss different uses of vocabulary or different grammatical structures. Videos are also an excellent source of cultural content and language pragmatics. Students can observe closely how the language is used for different purposes in the show. Moreover, teachers can also educate the parents about the benefits of parent-child co-viewing, the importance of appropriate programme content and viewing hours. With such information available, parents are more likely to make an informed decision concerning their children's viewing habits.

Our study is limited by the small sample size and the very low response rate; thus, our results are only suggestive and we cannot generalise to the Singapore population. Another limitation was that the language proficiency data were gathered through self-report and parental report. Self-report and parental report may not always be accurate, and do not allow for more fine-grained analysis of how television viewing may affect different oral language and literacy skills.

Future studies could assess both the parents' and children's language proficiency directly, and explore different aspects of language proficiency, such as vocabulary, phonological awareness, listening comprehension and literacy skills, as they relate to television viewing. A daily log might also be used to more specifically record children's television viewing (such as what programmes, in what language, for how long), and could also be used to document children's other activities that may affect their language exposure, such as reading, language interactions with their caretakers, and daily social interactions that

involve language. In addition to using more fine-grained methods in the Singapore context, this study can be replicated in other contexts, especially other multilingual situations. In monolingual contexts where other languages are learned primarily through classroom instruction in a 'foreign language' environment, television can provide additional exposure to a little-used language. In these situations, using a survey or television log can help teachers understand more about their students' language exposure and interests. Although our study begins to address the gap in research regarding children's television viewing in multilingual settings and its relationship to language learning, much more research remains to be done.

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