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Literacy among Malaysian Primary Schoolers: How do Boys Perform Relative to Girls?*

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Abstract

The performance of boys in literacy has become an issue of increasing concern around the globe. This paper discusses the results of a study that sought to determine the literacy performance of Malaysian primary schoolers. Using one of the states in the country as a case study, data on approximately 85 000 students from grades 1, 2, and 3 were obtained. Teachers' views were also sought through focus group interviews and journal entries. The results show that although there is an overall improvement in literacy performance in the national language among the students as they go into Grades 2 and 3, girls are found to outperform boys in every screening for all grade levels.

Keywords: Boys' underperformance, literacy, literacy performance, reading.

Introduction

There has been a great deal of research regarding boys' academic underachievement in the last two decades. Various terms such as "boy gap", "boy crisis", "boys' underachievement" and "failing boys" have been used to discuss their educational achievement, which has now become the focus in many countries around the globe (Cassen & Kingdon, 2007; Collins, Kenway, & McLeod, 2000; Alloway, Freebody, Gilbert & Muspratt, 2002; Gilbert, 1998; Gill, 2005; Lindsay & Muijs, 2005; Machin & McNally, 2005; Martin, 2003; Department for Education and Skills, DfES, 2007). In the United Kingdom, for example, boys had outperformed girls by about 5%, from 1987 onwards, and only about eighty boys to every hundred girls have achieved 5 high-grade passes at 16+ (Arnot & Phipps, 2003). In addition, more boys than girls fail to achieve level 4 in English national tests at the end of key stage 2 (Younger et al., 2005). At the GCSE level, girls were found to have performed at par, or even to have outshone the boys in all subjects (i.e. English, History, ICT, Mathematics, Physics, Science, Economics, Social Science, Media Studies, and French), except for the Construction subject (National Literacy Trust, 2012). Likewise, in Australia, the evidence shows that many boys are not performing well on a range of educational achievement measures, and that the gap between boys' and girls' performance has increased over time (Alloway, Freebody, Gilbert, & Muspratt, 2002; Martin, 2002;

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Munns et al., 2006; Slade & Trent, 2000). Such is also the case in the East Asia and Pacific countries, including the Philippines, Thailand, and Malaysia (UNESCO, 2009; United Nations Girls' Education Initiative UNGEI, 2012).

In Malaysia, it has been observed that boys are not achieving very well in many subjects as shown in the national examination results at all three levels of schooling—primary, lower secondary, and upper secondary—and that in almost all school subjects, girls perform better than boys (Preliminary Report - Executive Summary Malaysia Education Blueprint 2013-2025, 2012; Zalizan Mohd Jelas, Saemah Rahman, Roselan Baki, & Jamil Ahmad, 2005). This trend continues to the university, where statistics show that female students far outnumber male students in undergraduate programs, with a significant ratio of 65% girls to 35% boys (Rohaty Mohd Majzub & Maisarah Muhammad Rais, 2010a, 2010b). Current statistics also show that the ratio of female to male university graduates is at 60:40 (Educational Planning and Research Division, 2012; Raina Ng, 2011).

Literacy and Its Relationship to Academic Achievement

Research suggests that low academic achievement is closely linked to the lack of strong literacy skills, as students with poor literacy skills will struggle not only in school, but also throughout life (Clark & Burke, 2012; National Literacy Trust, 2012). Having strong literacy skills is essential for success in school and beyond because literacy is "the prerequisite to academic achievement", which requires that students "read and write across a wide variety of disciplines, genres, and materials with increasing skill, flexibility and insight" (Snow & Biancarosa, 2003, p. 5) as well as to read, understand, and learn from an increasing level of demanding texts, which require that they master words and vocabulary, expand their knowledge, and also be able to think in an open and critical way (Chall & Jacobs, 2003). Research also indicates that strong literacy skills in children are developed when they are given early experiences with reading, as this contributes to later success or failure in learning to read (Ferreiro & Teberosky, 2009). Indeed, there is strong evidence to indicate that the consequences of a slow start in literacy become enormous over time and continue to adulthood without the proper intervention (Grossen, 1997; Slavin & Madden, 1989). Given the importance of literacy and its relationship to academic achievement, it is important to ensure that students master these skills during their early school years.

This paper describes the results of a study that sought to investigate the literacy performance of Malaysian boys and girls in their first three years of schooling. Specifically, it sought to determine whether there are discernible patterns between boys' and girls' literacy scores in the language of instruction—the Malay language—so that efforts could be taken to help improve students' literacy and academic performance. The study was guided by the following research question: How do primary school boys in the state of Selangor perform in literacy relative to girls?

Literacy and the Assessment of Literacy

Literacy is a significant issue for all nations (National Literacy Trust, 2012). It is crucial for students to master literacy skills in order to succeed academically. The literature has also shown that the mastery of literacy skills at an early age is important (Connolly, 2004; Jones, 2003; Lindsay & Muijs, 2005; Rathvon, 2004; Warrington & Younger, 2006) because in the long run "the ability to read and write is essential to successful participation in society" (Jones, 2003, p. 3). Hence, it is important to have a coordinated system for monitoring students' literacy development, and for certain measures to be developed so that students' performance in literacy can be gauged.

At the international level, several literacy assessments are available to fulfill that monitoring need at different levels of students' schooling. One example is the Program for International Student Assessment (PISA), which measures the performance of 15-year-olds in reading literacy, mathematics, and science every three years (OECD, 2010); another is the Progress in International Reading Literacy Study (PIRLS), conducted every five years since 2000 to determine students' reading comprehension covering reading for literary experience and reading to acquire and use information (TIMSS & PIRLS International Study Center, 2011); while yet another is the Literacy Assessment and Monitoring Program (LAMP) under the UNESCO Institute for Statistics (UIS), which measures the reading skills of youth and adults in relation to continuous (prose) and non-continuous texts (documents), numeracy skills, and reading component skills (UNESCO Institute for Statistics, 2009).

Assessments conducted at the national level include, among others, the National Assessment Program -Literacy and Numeracy (NAPLAN) tests, which are the only Australian assessments providing national data on students' literacy and numeracy performance carried out in Years 3, 5, 7 and 9 (Australian Curriculum Assessment and Reporting Authority, 2013), and the Scottish Survey of Literacy and Numeracy (SSLN), which observes the national performance of school children at Primary 4, Primary 7, and Secondary 2 in alternate years for literacy and numeracy (The Scottish Government, 2013, 2014).

Meanwhile, in Malaysia, where literacy proficiency is the foundation and aspiration of the national education system (Chew, 2012), and boosting students' literacy proficiency is the immediate priority (Preliminary Report - Executive Summary Malaysia Education Blueprint 2013-2025, 2012), the Literacy and Numeracy Screening (LINUS) program is conducted to identify students with difficulties in reading, writing, and basic arithmetic, and to provide all Malaysian children with a sound base in basic literacy and numeracy skills within the first three years of their primary school education. It was initiated under the Malaysian Government Transformation Program (GTP) 1.0 as one of the focus areas of the National Key Result Areas (NKRAs) (Chang, 2011a, 2011b; Nazariyah Sani & Abdul Rahman Idris, 2012; Preliminary Report - Executive Summary Malaysia Education Blueprint 2013-2025, 2012). The LINUS program, which was first started in 2010, assesses students from Grades 1 to 3 on their performance on literacy and numeracy. Two screenings are carried out; one in May and the other in September or October (Ministry of Education Malaysia, 2013c). However, this study only focused on the assessment of students' literacy.

The instruments used to screen the students were developed by a panel of national experts under the direction of the Malaysian Examinations Syndicate, and verified by another panel of national experts in terms of their validity, reliability, feasibility and also quality (Examinations Syndicate, Ministry of Education Malaysia, 2012; Ministry of Education Malaysia 2013a, 2013b, 2013c). The development of the instruments underwent several processes based on a standardized Work Procedure Manual, starting with the development and evaluation of the items in line with the item specifications, containing the aspects of measurement, context, and the level of difficulty of the items (Examinations Syndicate, Ministry of Education Malaysia, 2012).

In the LINUS program, literacy is defined as "The ability to read, write and understand words and sentences, and apply the knowledge in learning and daily communication" (Ministry of Education Malaysia, 2013, p. 2). 12 constructs are measured, as shown in Table 1:

Table 1. *Twelve Constructs Measured in the Literacy Screening*

Constructs	Descriptions
1	Ability to read and write letters (vowels and consonants).
2	Ability to read and write open syllables.
3	Ability to read and write words with open syllables.
4	Ability to read and write closed syllables.
5	Ability to read and write words with closed syllables.
6	Ability to read and write words with closed syllables 'ng'.
7	Ability to read and write words with diphthongs.
8	Ability to read and write words with diphthongs (vowels).
9	Ability to write words that contain diagraph and consonant blends.
10	Ability to read and write words with prefixes and suffixes.
11	Ability to read and write simple sentences.
12	Ability to read, understand and write sentences based on stimuli.

(Source: Ministry of Education Malaysia, 2013a, p. 2-3)

Methods

This paper describes a study of primary school students' literacy performance in the state of Selangor, the most populous state in Malaysia, and also one of the leading states contributing to her economic growth (Department of Statistics Malaysia, 2014). We chose to conduct a study on the state of Selangor because of the diversity of creeds, cultures, gender, races and education levels of its population, which generally reflects that of Malaysia as a whole.

In order to obtain the most accurate results regarding the literacy performance of boys and girls in this state, we obtained the entire population of Malay language literacy scores from all the students in Grades 1, 2 and 3, from all the government primary schools in the state of Selangor. The data were obtained from the Selangor State Department of Education through its nationwide LINUS program, specifically tailored for students of Grades 1, 2 and 3.

We also interviewed Malay language teachers from 6 selected schools in the state using the focus group interview to get an insight into how they feel about the literacy performance of boys and girls. The focus group interview presented us with the opportunity to observe a large amount of interaction on the topic being discussed in the time available to us. It also allowed for a large amount of concentrated data that were directly related to our focus and interest (Morgan, 1997). As the interviewees were all primary school teachers teaching Grades 1, 2 and 3, it allowed them to share their personal views in a similar and comparable context. This was a great advantage, as focus group interviews would, according to Cresswell (2008, p. 226), "likely yield the best information … when interviewees are similar to and cooperative with each other". In addition, according to Krueger & Casey (2009) and Onwuegbuzie et al. (2009), focus groups can set a less intimidating environment for many participants, which allows them to discuss their views, ideas, and thoughts more freely. We also obtained thick and rich data through the teachers' journal entries, where they recorded their thoughts and reflections regarding the issue of boys' and girls' literacy performance. Numerous studies have used journal or diary entries, especially when they deal with practitioners such as teachers; because their reflections can encourage the creation of meanings for new ideas and insights, rooted in their practices (Jarvis, 1992; Moon, 2003; Ortlipp, 2008).

Results

The research question was addressed through the analysis of students' scores on the LINUS. The screenings were conducted on primary school students from Grades 1 to 3 in two phases – Screening 1 (March to April 2013) and Screening 2 (September to October 2013). We were able to obtain the whole population of Grade 1, Grade 2, and Grade 3 literacy scores for the state of Selangor, which approximately amounted to around 85,000 pupils per grade level (refer to Tables 2 to 4). The results obtained were of three categories: those who: i) have not mastered constructs 1-2, ii) have not mastered constructs 3-12, and iii) have mastered constructs 1-12 (Malaysian Ministry of Education, 2013d). Students who do not master the first two basic constructs are considered very weak, and are taught following the LINUS modules prepared by the ministry, while those who have mastered all the twelve constructs are placed in the mainstream classes, and taught following the standard syllabus and textbooks. For those who have not mastered constructs 3-12, they will be taught using either the LINUS module or the standard module, based on its suitability as judged by their teachers (Ministry of Education Malaysia, 2013e). It is also necessary to point out that although literacy in general includes reading and writing, in LINUS, the writing section only involves simple and basic writing, given that it is meant for Grades 1 to 3 (e.g. writing syllables, words, and simple sentences).

How do primary school boys in the state of Selangor perform relative to girls?

For Grade 1, the percentage of boys (7.94%) who have not mastered the very basic Constructs 1 and 2 in the first screening is nearly double that of girls (4.61%). The percentage of boys who have not mastered Constructs 3-12 was also greater (27.66%) than that of girls (20.04%). Conversely, the percentage of girls who have mastered all Constructs 1-12 was higher than that of the boys, by a difference of 11%.

In the second screening for Grade 1 students, there was still a greater percentage of boys who have not mastered Constructs 1-2, and Constructs 3-12. In total, about twice, or 20.04% of the boys were found to have not mastered those constructs compared to only 11.77% of the girls. Nevertheless, in comparison to the first screening, the performance of the boys improved, as seen from the increase in the percentage of boys who have mastered Constructs 1-12; from 63.4% to 80%. However, the percentage of girls who have mastered all 12 constructs was 8.27% higher than that of the boys.

Table 2. *Grade 1, Screenings 1 and 2 Malay Language Literacy Performance 2013*

	Screening 1 N = 85 083 (Boys = 43 848; Girls = 41 235)			Screening 2 N = 84 844 (Boys = 43 703; Girls = 41 141)		
	Boys	Girls	Total	Boys	Girls	Total
Have Not Mastered (C1-C2)	3 481 (7.94%)	1 900 (4.61%)	5 381	1 538 (3.52%)	759 (1.84%)	2 297
Have Not Mastered (C3-12)	12 130 (27.66%)	8 264 (20.04%)	20 394	7 219 (16.52%)	4 085 (9.93%)	11 304
Have Mastered (C1-12)	28 237 (63.40%)	31 071 (75.35%)	59 308	34 946 (79.96%)	36 297 (88.23%)	71 243
Total	43 848 (100%)	41 235 (100%)	85 083	43 703 (100%)	41 141 (100%)	84 844

The same pattern can also be observed amongst the Grade 2 and Grade 3 students: A higher percentage of the boys were assessed as not having mastered the constructs 1-2

and 3-12 compared to the girls (Table 3, Table 4, and Figure 1); and conversely, the percentage of girls who were assessed as having mastered the concepts 1-12 is much higher than that of the boys; and both boys and girls showed an improvement in their literacy scores in the second screening compared to the first.

Table 3. *Grade 2, Screenings 1 and 2 Malay Language Literacy Performance 2013*

	Screening 1 N = 83,751 (Boys = 43 095; Girls = 40 656)			Screening 2 N = 83,580 (Boys = 42 998; Girls = 40 582)		
	Boys	Girls	Total	Boys	Girls	Total
Have Not Mastered (C1-C2)	878 (2.04%)	432 (1.06%)	1 310	457 (1.06%)	243 (0.60%)	700
Have Not Mastered (C3-12)	4 847 (11.25%)	2 594 (6.38%)	7 441	2 730 (6.35%)	1 286 (3.17%)	4 016
Have Mastered (C1-12)	37 370 (86.71%)	37 630 (92.56%)	75 000	39 811 (92.59%)	39 053 (96.23%)	78 864
Total	43 095 (100%)	40 656 (100%)	83 751	42 998 (100%)	40 582 (100%)	83 580

Table 4. *Grade 3, Screenings 1 and 2 Malay Language Literacy Performance 2013*

	Screening 1 N = 85 050 (Boys = 43 733; Girls = 41 317)			Screening 2 N = 84 916 (Boys = 43 627; Girls = 41 289)		
	Boys	Girls	Total	Boys	Girls	Total
Have Not Mastered (C1-C2)	346 (0.79%)	253 (0.61%)	599	154 (0.35%)	82 (0.20%)	236
Have Not Mastered (C3-12)	1 807 (4.13%)	896 (2.17%)	2 703	419 (0.96%)	202 (0.49%)	621
Have Mastered (C1-12)	41 580 (95.08%)	40 168 (97.22%)	81 748	43 054 (98.69%)	41 005 (99.31%)	84 059
Total	43 733 (100%)	41 317 (100%)	85 050	43 627 (100%)	41 289 (100%)	84 916

The findings also show that there is an overall improvement in the Malay language literacy performance by both boys and girls at all grade levels, as measured by their scores on the mastery of the 12 constructs (Figure 1). The difference in literacy performance scores between boys and girls becomes less obvious in Grades 2 and 3, with the least difference observed in Grade 3. Similar to the results of many other previous studies (Carr & Pauwels, 2006; Clark & Douglas, 2011; Cuttance & Thompson, 2008; European Commission, 2009; Gilbert & Gilbert, 1998), the girls outperformed boys on literacy performance, as measured by LINUS 2013.

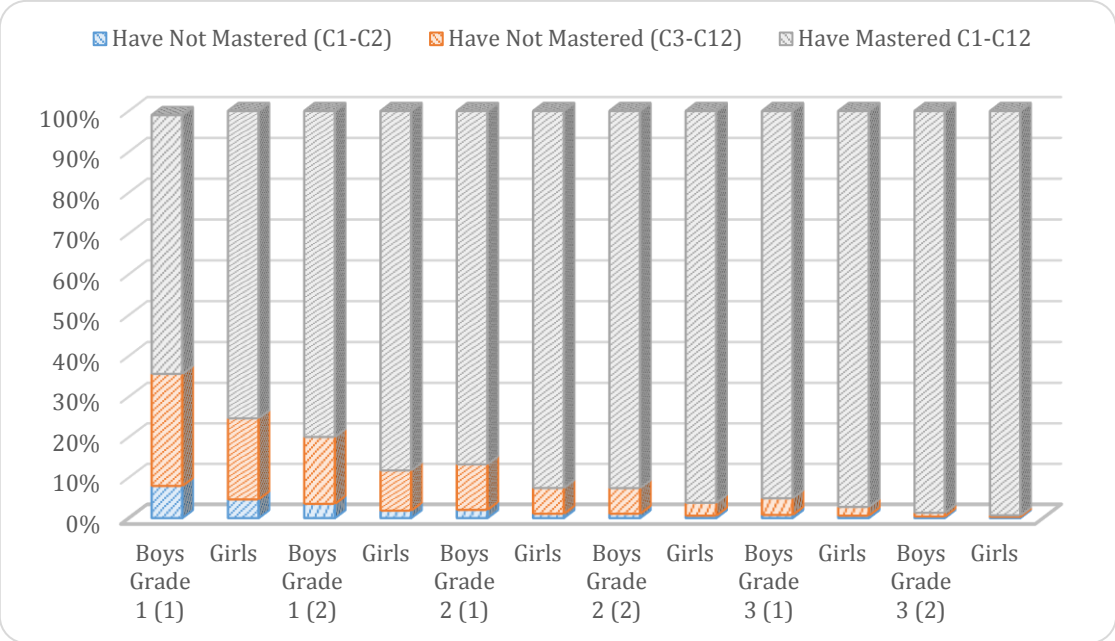

Figure 1. *Grades 1,2,3, Screenings (1) & (2) Bahasa Malaysia Literacy Performance 2013*

The findings are corroborated by the views of the majority of the Malay language teachers interviewed. They agreed that in general, girls perform better than boys in reading. Many of the teachers felt that boys read less than girls, and boys hold less positive attitude towards reading compared to girls. The teachers also felt that most boys do not show as much interest in reading in comparison to girls—and that "Boys cannot give full concentration" and that "they are easily distracted" when asked to read, either in the class or at home. The teachers were also of the view that "Boys are less interested and less diligent".

In spite of this, a few teachers thought that there is not much difference between boys and girls in terms of their literacy performance, especially those in good classes. They believed that it is the students' individual attitude, rather than gender, that plays a more important role in determining their literacy achievement.

The improvement in boys' literacy performance as they go up to higher grades has also been observed by the teachers, as reported in the focus group interview. They opined that the younger boys (i.e., those in Grade1) are less mature, and love to play—more so than the girls. The boys are also less focused and are "perpetually in motion", as mentioned by a few teachers. One teacher said, "Boys can 'transform' anything into toys, and if there is nothing, even a pencil or a pencil case can be a toy for them". This might also be related to the gender-based differences between boys and girls, as suggested by Bonomo (2010), where the former are said to have less serotonin and oxytocin that cause them to be more "impulsive" and harder to "sit still to talk to someone" (p.258). The teachers also concurred that when the boys are older (Grade 3), they tend to be more mature, stable, and more interested.

All the teachers also agreed that boys prefer to learn through games and activities involving physical movement, instead of the textbook. Among the examples they gave were activities such as arranging cards representing parts of a sentence across the classroom, and also singing. This is in line with King & Gurian's (2006) suggestion that experiential and kinesthetic learning opportunities should be increased to attract and access boys' neurological strengths.

Girls on the other hand, according to the teachers, have better focus in the things they do. They specifically mentioned, “Girls have a longer attention span”. The girls, according to the teachers, are very attentive. When instructed to read a text in class, they can sit down and perform their reading. Their observations are congruent with Bonomo's (2010) assertions of gender-based differences in learning—that girls possess the capability to deal better with transitions between lessons. Girls also face fewer attention span issues compared to boys.

The Malay language teachers were also of the view that generally, girls are able to recognize the alphabets earlier than the boys. Also, with regard to the issue of penmanship, they write more beautifully and produce neater work than boys. Boys’ development in reading literacy is observed by the teachers as being slower than that of the girls. Again, this corresponds with what Bonomo (2010), Gurian & Stevens (2004), and Gurian (2011) have suggested as being the brain-based genetic difference in boys and girls. According to them, girls develop language and fine motor skills about six years earlier than boys.

Finally, through their journal entries, the majority of the teachers expressed the view that a student’s academic achievement is closely related to his or her reading attitude. They found that throughout their extensive teaching experience, girls have obtained better academic results. This once more corroborates the results of previous studies, which concluded that girls not only outperformed boys in academic achievement, but also in literacy, especially reading (Brochu, Deussing, Houme, & Chuy, 2012; Carr & Pauwels, 2006; Clark & Douglas, 2011; Cuttance & Thompson, 2008; European Commission, 2009; R. Gilbert & Gilbert, 1998; Martin et al., 2008; OECD, 2009; Voyer & Voyer, 2014)

Conclusion

The data gathered from approximately 85,000 students from Grade 1, 84,000 students from Grade 2, and 85,000 students from Grade 3 show that the literacy performance of primary school boys in the state of Selangor, Malaysia, is lower than that of the girls; a situation that is also observed at different levels of schooling in many other countries around the world. This is especially evident during the earlier phase of formal schooling, i.e., in Grade 1. In Grade 2, although the difference is smaller, and Grade 3, where the difference is least, girls, nonetheless, still show better results in reading literacy compared to boys.

Given the results, which are corroborated by the observations of teachers, there is a need to develop a holistic approach towards teaching literacy across the whole primary school curriculum. It is important to develop successful readers who are engaged in reading; hence, it is imperative that we not only teach reading but also encourage boys (and girls) to read—so as to avoid creating a generation of reluctant readers. Knowing how boys and girls perform in literacy at the earlier stages of primary school would enable teachers, textbook writers, and curriculum developers such as the Curriculum Development Division to develop lessons and materials that would take into consideration the interests and needs of boys and girls. We suggest that at the school level, teachers take into consideration the differences in how boys and girls approach reading so that a possibly different approach or set of reading materials would be used for boys and girls. Finally, it is also crucial to provide the needed support for teachers so that they can plan for a variety of lessons encompassing different interests and learning styles, as well as to assist them to become more creative teachers. With this, it is hoped that boys will be as interested in, and enjoy reading as much as, the girls; and eventually do as well as the girls in literacy.

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