

Reading Performance of Malaysian Students across Gender in PISA 2012

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ABSTRACT

The 2012 PISA reading literacy aims to measure 15 year-olds' reading performance in preparing them to meet real-life challenges. The primary aim of the present study is to examine Malaysian students' reading performance by comparing the girls' and boys' performances in PISA 2012. The 2012 PISA reading literacy framework comprises three important reading aspects: access and retrieve (AR), interpret and integrate (II), and reflect and evaluate (RE). These aspects were further examined through the students' reading performance in five types of text namely narration, exposition, argumentation, description and instruction. The findings demonstrate that the students performed better in AR than in II and RE indicating a better performance in lower-order reading skills than in the higher-level reading aspects. Findings also show that girls outperformed the boys across all reading aspects and types of reading texts. This paper concludes by emphasizing the need to integrate higher-order reading skills in the reading curriculum in order to prepare Malaysian students for better literacy competency.

Keywords: PISA 2012; reading performance; gender; reading aspects; text types

INTRODUCTION

Programme for International Student Assessment (PISA) which was developed by the Organisation for Economic Co-operation and Development (OECD) is a measure for assessing the excellence, equity and effectiveness of the school systems. The triennial PISA assessment was first implemented in 2000 with 43 countries. The assessment continued in 2003, 2006, 2009 and the latest assessment was administered in 2012, which saw the participation of 65 countries. The scope and nature of the PISA assessments are outlined by the participating countries based on recommendations from the experts. PISA provides three major outcomes; basic indicators on students' knowledge and skills profile, indicators highlighting the relationship between skills and demography, social, economic and educational variables and indicators on developments in student performance and the relationships between student-level and school-level variables and outcomes (OECD 2013b). According to OECD, PISA findings are highly valid and reliable due to the strict quality controls imposed on the design and translation of the test as well as sampling and data collection procedures. The statistical outcomes have facilitated governments and educators to characterise policies suitable for the local context (OECD 2013a).

PISA 2012 encompassed 34 OECD member countries. Although Malaysia is not a member of the OECD, it falls under the 31 partner countries and economies participating in the 2012 cycle along with several other ASEAN member countries including Indonesia, Singapore, Thailand and Vietnam. There are several key features of PISA 2012. Firstly, the

survey emphasised mathematics performance, with reading, science and problem solving as secondary areas of assessment. It does not only assess whether the students can reproduce knowledge but also evaluates whether they can deduce what they have learned and apply such knowledge to new contexts. Secondly, it recorded the participation of approximately 510,000 students, representing about 28 million 15-year-olds from 65 participating countries. It involved students who are between the ages of 15 and 16 at the time of assessment. Thirdly, the paper-based tests which consist of multiple-choice items and questions require a total of two hours for each student, with different students taking different combinations of test items.

MALAYSIA'S INVOLVEMENT IN PISA 2012

Malaysia participated for the first time in the 2009 PISA assessment cycle. The 2009 PISA results shows that in comparison to international standard, Malaysia's performance was rather inferior compared to its ASEAN counterparts in reading, mathematics and science performance of the 15 year-olds. Among the three subjects, Malaysia attained better performance in Science, at 52nd place, way behind Singapore (4th) and Thailand (51st). At 57th place, the country recorded a poor performance in mathematics, with Singapore second in the list and Thailand at 52nd place. In reading, Malaysia was ranked at 54th place compared to Singapore (5th) and Thailand (52nd) (see Table 1). Nonetheless, the performance in all the three subjects served as a 'wake up' call for Malaysia on the mediocrity of its education system compared to its neighboring ASEAN countries. Not only that, the international results also indicated that the gap between the system adopted by Malaysia and other countries are growing and it is imperative that Malaysia find ways to sustain the momentum because the international assessment suggests that Malaysian students' performance is declining in absolute terms.

TABLE 1. Comparison of Malaysia's PISA 2009 ranking against other countries in Reading, Mathematics and Science Achievement

READING			MATHEMATICS			SCIENCE		
Rank	Country	Mean Score	Rank	Country	Mean Score	Rank	Country	Mean Score
1	Shanghai-China	556	1	Shanghai-China	600	1	Shanghai-China	575
2	Korea	539	2	Singapore	562	2	Finland	554
3	Finland	536	3	Hong Kong	555	3	Hong Kong	549
4	Hong Kong	533	4	Korea	546	4	Singapore	542
5	Singapore	526	5	Taiwan	543	5	Japan	539
18	United Kingdom	494	24	Austria	496	20	Ireland	508
OECD Average	19 Germany	497	25	Poland	495	21	Czech Republic	500
	42 Russian Federation	459	41	Croatia	460	40	Greece	470
Inter-National Average	43 Chile	449	43	Israel	447	41	Malta	461
	52 Thailand	421	52	Thailand	419	51	Thailand	425
	54 MALAYSIA	414	57 MALAYSIA	404	52 MALAYSIA	422	422	
	61 Indonesia	402	67	Indonesia	371	65	Indonesia	383

**Source: Ministry of Education Malaysia (2012)

GOVERNMENT POLICY ON SCHOOL'S PERFORMANCE

The Malaysian Education Blueprint 2013-2025 was developed with three objectives; identify the current performance and challenges of the Malaysian education system, form clear vision

and aspirations for individual students and the education system and frame a comprehensive transformation system for the system.

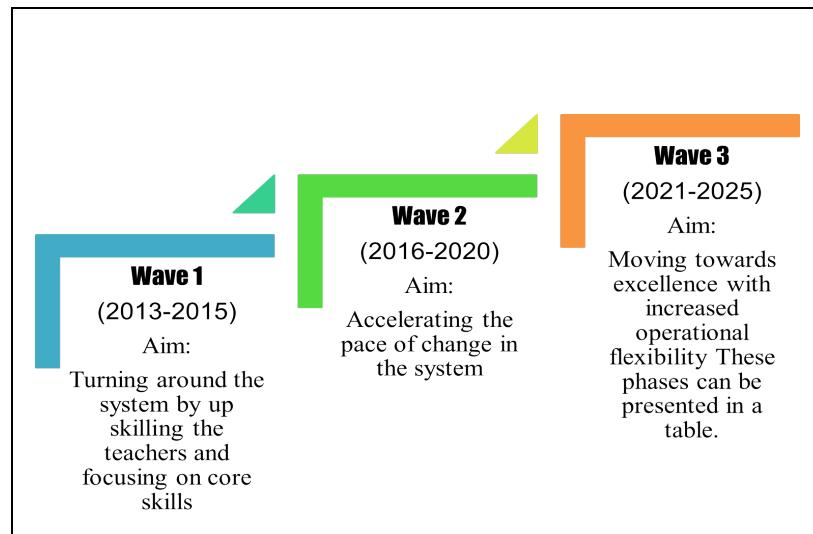


FIGURE 1. Three waves of education transformation as highlighted in Malaysia Education Blueprint 2013-2025

These three waves embrace the following elements; student learning, teachers and school leaders, system structure as well as the ministry transformation.

Students' performance in PISA 2012 is significantly related to the element of student learning whereby the findings is expected to contribute to the improvement of the curriculum and assessment of the subjects taught in schools. Malaysia's involvement in the 2009 PISA has enabled the country to take stock of the students' performance in the Reading, Mathematics and Science subjects. This paper will merely report the findings on the students reading performance for PISA 2012. The definition of PISA 2012 reading literacy is an individual's understanding, using, reflecting on and engaging with written texts, in order to achieve one's goals, to develop one's knowledge and potential, and to participate in society (OECD 2014, p. 176)

The report for PISA 2012 (see Table 1) indicated that Malaysia ranks much lower than its East and Asian counterparts. Malaysia achieved below the average score in reading literacy. In the PISA reading literacy report, one of the general trends was the gender differences in reading performance. This paper attempts to analyse the students' reading performance according to the different sub-scales of reading aspects as defined by PISA 2012. It also offers an analysis of their scores on the different types of reading text and investigates the different gender's performance for each category. In order to accomplish these objectives, three research questions were formulated as follows:

1. What is the students' reading performance in the reading aspects across gender?
2. What is the students' reading performance the reading aspects across different text types?
3. What is the students' reading performance in the different types of reading texts across gender?

PISA READING FRAMEWORK

PISA is concerned with the capacity of students to apply knowledge and skills and to analyse, reason and communicate effectively as they pose, solve and interpret problems in a variety of

situations. This conception of literacy is clearly a much broader one than the historical notion of the ability to read and write. The PISA 2009 definition of reading adds engagement in reading as an integral part of reading literacy:

“Reading literacy is understanding, using, reflecting on and engaging with written texts, in order to achieve one’s goals, to develop one’s knowledge and potential, and to participate in society”
(OECD 2009, p. 9)

The framework for PISA reading literacy 2012 is based on the literacy framework of PISA 2009 (OECD 2009). It involves three important reading aspects: Access and Retrieve, Integrate and Interpret, and Reflect and Evaluate (Thomson, Hillman & De Bortoli 2013). The OECD reading literacy framework 2009 outlines comprehensive descriptions of the reading aspects that are assessed on the students namely Access and Retrieve (AR), Integrate and Interpret (II) and Reflect and Evaluate (RE).

ACCESS AND RETRIEVE (AR)

In daily life, readers often need to access and retrieve information from texts that they encounter every day. In order to do this, readers must scan, search for, locate and select relevant information to assess and retrieve the information. Accessing involves the process of locating and getting to the information required. Retrieve, on the other hand, involves the process of scanning and selecting the information. The basic skills required are selecting, collecting and retrieving the information. The tasks for this ability range from locating the details required by telephone number with several prefix codes, to finding a particular fact to support or disprove a claim someone has made.

INTEGRATE AND INTERPRET (II)

Integrating and interpreting the information in the text involves an active interplay of lower and higher-order processing skills to integrate various pieces of information. This is carried out in order to interpret the information, achieve a deeper level of text comprehension and construct meaning to it. Integrating focuses on demonstrating an understanding of the coherence of the text. A successful integration and interpretation of the information refers to the process of inferring the meaning of the text implicitly. This requires readers to recognise a relationship that is not explicit and infer (by deducing from evidence and reasoning) the connotation of a phrase or a sentence. This will result in the construction of a coherent and meaningful representation of the text. Interpreting refers to the process of making meaning from something that is implicit. When interpreting, a reader is identifying the underlying assumptions or implications of part or the whole text. This requires complex inference ability in looking at the underlying meaning of the text. The interpretation process can take place when a reader forms a coherent representation of the text. Both interpreting and integrating are required to form a broad understanding.

REFLECT AND EVALUATE (RE)

The main characteristics of reflecting and evaluating the content and form of the text are the ability to draw upon the readers’ knowledge (i.e. readers’ formal schemata) and experiences to reach a deeper understanding of the text. Reflecting on the information in the text requires readers to draw upon their knowledge of the text structures and text types that form the basis of text productions and writer’s intention. Their experiences and knowledge in these aspects can help them evaluate the appropriateness as well as evaluate and assess the claims made by the authors and the underlying attitude of the writers in producing a text.

The descriptions of the reading aspects in PISA underscore the execution of several underlying levels of comprehension and lower- and higher-order cognitive processes (see Krathwold 2002 for cognitive taxonomy). AR involves more literal comprehension while II and RE involve inferential reading ability that require active integration of one's personal and world knowledge in meaning construction process.

TEXT TYPES AND READING COMPREHENSION/PERFORMANCE

PISA 2012 reading texts comprise a mixture of several text types. Different types of texts have been found to affect comprehension processing tasks among the children and college students (Yoshida 2012). The different types of text in PISA reading comprise description, narration, exposition, argumentation, and instruction.

- i) *Descriptive text* typically focuses on questions on *what*. The examples of the descriptive texts are the depiction of a situation in a travelogue or diary, a catalogue, a map or a description of a feature, function and processes in a technical manual.
- ii) *Narrative text* consists of information that refers to properties of objects in time. The questions in texts typically asked the reader to provide *when* and *in what sequence*. Readers are required to answer why such character in the story behave in such a way. Narrative texts also include news stories and report. Examples include a novel, a short story, a comic strips and a newspaper report of an event.
- iii) *Exposition text* involves an analysis of a concept or mental construct. The text requires explanations on *how*. Examples of text type category exposition are a scholarly essay, a diagram showing a model of memory, a graph of population trends and a concept map.
- iv) *Argumentation text* presents the relationship among concepts or propositions which usually answer the question *why*.
- v) *Instruction text* gives directions on what to do to complete a task. Examples of the text are a recipe, a series of diagrams showing a procedure or guidelines to operate digital software.

In reading comprehension studies, text types have been found to significantly affect readers' comprehension and processing ability (Brantmeier 2005; Horiba 2000; Eason, Goldberg, Young, Geist & Cutting 2012; Yoshida 2102). Studies that examine the effects of text types on reading comprehension show that narrative and exposition receive more attention than other text types (Alderson 2000).

GENDER AND READING IN L2

In recent years, there has been an increasing amount of literature that shows reading interest, engagement and motivation are highly related to gender differences in reading performance (Boltz 2007; Logan & Johnston 2010; Senn 2012). Reading attitude and motivation influence the boys and girls reading performance in that boys' attitude and motivation are significantly related to reading skills than girls' attitude and motivation (Logan & Johnston 2010). This situation is consistent among students with similar reading instruction in schools. The differences in the level of attention, interest, motivation and preference in the reading materials used in the classrooms can influence the amount of time that girls and boys spend on reading.

There are several prominent characteristics of boys in relation to their reading attitudes. Smith and Wilhelm (2002) (as cited in Senn 2012) highlighted the fundamental characteristics of boys in reading:

- Boys take longer to learn to read than girls.
- Boys generally provide lower estimations of their reading abilities than girls do.
- Boys read less than girls.
- Boys express less enthusiasm for reading than girls do.
- Boys increasingly consider themselves to be “nonreaders” as they get older; very few designate themselves as such early in their schooling, but nearly 50% make that designation by high school (p. 212).

Boys and girls are generally motivated to read different texts and books (Merisuo-Storm 2006). Boys generally prefer to read reading materials that have a purpose for examples text that can provide more information on something that interest them (Wilhem 2000). A research conducted by Smith and Wilhelm (2002) discovered that boys take longer to read, read less than girls and face more difficulties to comprehend narrative and expository texts. These reading materials may not be related to classroom activities in schools, therefore, are not motivating enough for the boys to engage in reading, unlike the girls (Merisuo-Storm 2006). The students’ reading performance in the three subscales in PISA reading was analysed by comparing the gender performances and reported in the following section.

DATA SOURCES

The Malaysian sample for PISA 2012 consisted of 164 schools and 5197 students. 2745 female (52.8%) and 2452 male (47.2%) students participated in this study. 40.2% of these students were sourced from the rural area whereas 59.8% were from the urban area. The selection of schools and students followed the criteria outlined by the Ministry of Education Malaysia and the OECD for assessing the skills and knowledge of 15-year olds.

FINDINGS AND DISCUSSION

This findings offer valuable information on reading engagement among the students. This section is organised according to the research questions posed earlier.

- 1) What is the students’ reading performance in the reading aspects across gender?

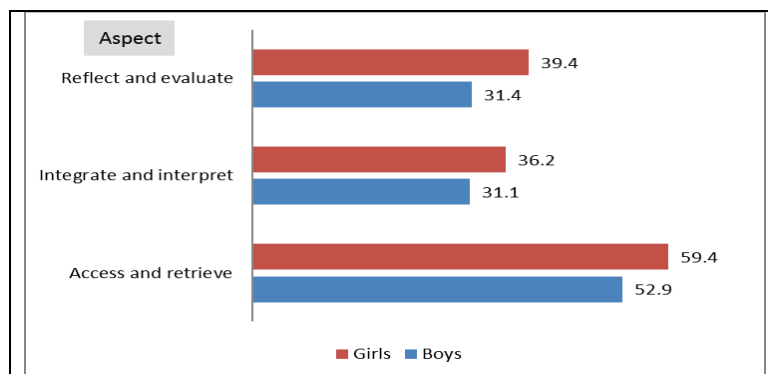


FIGURE 2. Reading Performance of Malaysian Students across Gender in PISA 2012

As shown in Figure 1, girls outperformed the boys across all reading aspects. They scored 59.4% compared to the boys who scored 52.9% of correct answers in AR aspect. In other aspects, the findings show that the girls scored higher number of correct answer than

the boys in RE than II aspect. In RE aspect, on average, the girls scored 39.4% while the boys scored only 31.4% of correct answers. Similarly, on average, the girls scored 36.2% while the boys scored only 31.1% of correct answers in II aspect. The findings suggest that the girls are cognitively better than the boys, not only in literal comprehension, but also in inferential comprehension questions. The findings in higher-order reading aspects demonstrate that by performing better in RE, the girls are better in reflecting and relate the information in the text to the outside world. The girls also are good at making judgments and evaluating the information in the texts by drawing on their personal experience and knowledge of the world. Better performance in this aspect also demonstrates that the girls were able to construct a better overall understanding of the text which allows them to connect their knowledge to the information in the text in order to evaluate the quality and appropriateness of the information that match their mental representations of the text. Ultimately, this enables them to understand the underlying intended meaning of the text better than the boys. In the II aspect, the finding suggests that the girls are better than boys in integrating the different parts of the text and understanding the different structures (problem-solving, compare-contrast and category-examples) of the text in order for them to make sense of the information in the text. This also means that they are also more competent in identifying the underlying assumptions or implications of the ideas in the texts than the boys.

Further analysis was carried out in investigating the students' performance in the reading aspects according to various texts types and gender. Fig.2 highlights the various text types and the overall correct score of each reading aspect according to gender.

2) What is the students' reading performance in the reading aspects across different text types?

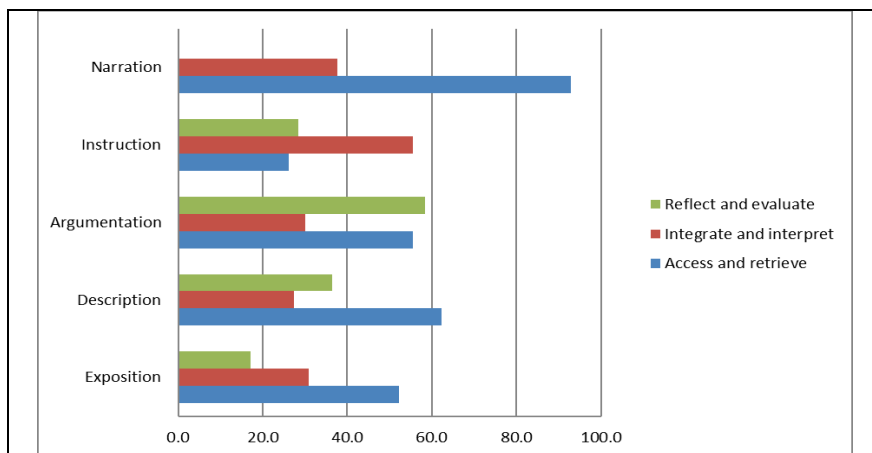


FIGURE 3. Text Types and Aspects of Reading Skills according to Overall Correct Score

Figure 2 shows the students' performance in the reading aspects across the five text types. The students generally performed better in AR reading aspects across all texts except for instructional and argumentation texts. They recorded the highest scores narration with 93% correct score. On the other hand, the students integrate and interpret better in instructional text with 56% correct score. In reflecting and evaluating reading aspect, they scored the highest in the argumentative text with 58% correct answers. The students scored the lowest in RE in expository text with only 16% correct score. Narrative text does not have comprehension questions that require the students to reflect and evaluate.

Interestingly, in the overall text types, students accomplished satisfactorily in the argumentative type of text with 45.2% but scored poorly in the exposition type of text with 33.6%. With regards to their performance in the argumentative type of text by aspects of reading skill, students performed better in RE with 58.4% compared to 55.5% in AR and

30.2% in II. In RE aspect of reading skill, argumentation type of text is scored the highest whereas students performed poorly in the exposition type of text. It is also interesting point out that narration does not have a category in the higher level of aspect of reading skill i.e. RE.

3) What is the students’ reading performance in the different types of reading texts across gender?

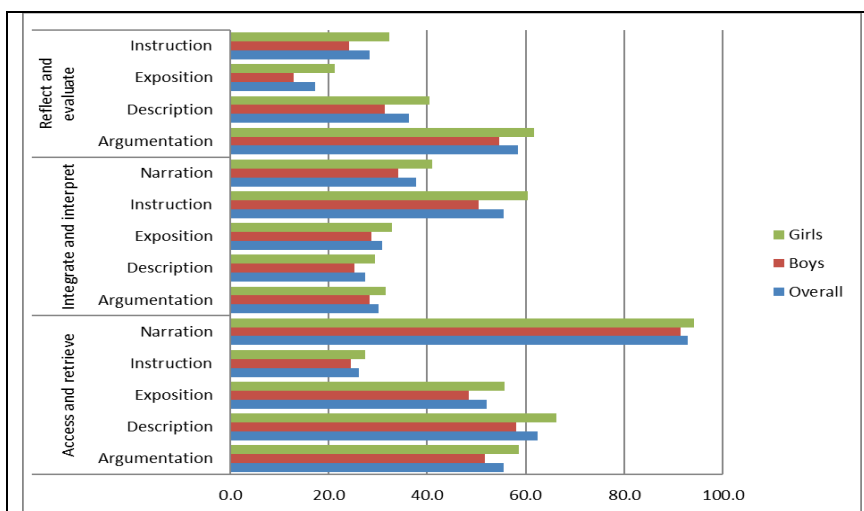


FIGURE 4. Text Types and Aspects of Reading Skills according to Correct Score by Gender

Figure 3 shows the performance by gender across the reading aspects and different types of texts. In general, the findings show that the girls outperformed the boys in all reading aspects assessed in all text types. The most compelling finding of the students’ overall reading performance is their comprehension ability in the narrative text which recorded the highest percentage of correct scores at 93% that they achieved in AR reading aspect. They, however, performed relatively poorly in the instructional text in AR aspect with only 26% obtaining a correct score.

In the II aspect, the students were able to integrate and interpret the information better in instructional texts with 56% having a correct score while they scored poorly in the descriptive text with only 27%. 60% of the girls had correct scores while only 50% of the boys managed to achieve correct scores in the instructional text.

In the RE aspect, the argumentative text recorded the highest percentage of correct scores with 58% in that 62% of the girls scored correctly while 55% of the boys managed to score correctly. The students recorded the lowest percentage of correct score in the expository text which accounts for only 17% in the RE aspect which is the lowest among all the texts across reading aspects.

Apart from the fact that girls’ reading performance is better than boys across all text types and reading aspects, it is also evident that the students were not able to perform competently in the higher-order reading skills i.e. reflecting and evaluating the information in the expository text. In the same vein, the students were found to be competently skilful in comprehending narrative text compared to other types of texts. Their overall performance in reading recorded 42.2% whereas the boys accomplished slightly lower at 36.1%.

DISCUSSION

The primary aim of this study is to investigate the Malaysian students’ reading performance in the PISA reading literacy 2012. Firstly, the findings of the students’ reading performance

in three main aspects show that the students generally performed significantly well in lower-level reading skills i.e. access and retrieve (AR) aspect compared to the higher-order reading skills i.e. integrate and interpret (II) and reflect and evaluate (RE) reading aspect. This finding is not surprising as it is a well-known fact among many educators and researchers that most Malaysian students are not skilful in higher-order reading comprehension skills (Kiong et al. 2012; Mohd Zin, Wong & Rafik-Galea 2014). Better performance in this reading aspect is expected because in order to access and retrieve, they are not required to engage in deeper processing of the information. However, interestingly, in the higher-order reading aspects, the students fared better in reflect and evaluate (RE) aspect than in integrate and interpret (II) aspects. Even though the difference in the percentage of correct score between II and RE is relatively small, this is rather an unexpected result because the Malaysian students oftentimes are claimed as less skilful or critical in evaluating the texts that they read (Crismore 2000; Koo 2003, 2008).

READING PERFORMANCE

The students' performance in the reading aspects provides a better understanding of the level of the students' cognitive ability. Poor ability in integrating and interpreting the information that they read in the text suggest that inferential process could have been hindered that they are less able in constructing a coherent representation of the texts that they read. The integration of the readers' personal (language knowledge e.g., vocabulary, of complex syntax or grammar, textual knowledge e.g., of text structures and textual devices), and world knowledge and world knowledge (disciplinary, interpersonal) is highly important for the students to generate their hypothesis and match their knowledge with the information in the text (Meyer & Ray 2011). Subsequently, the interpretation process is also affected that can potentially hinder their ability to interpret the text. The students were less likely able to reflect and evaluate the text critically when they are not able to achieve or form a broad understanding of the text. This eventually could hinder them from achieving a deeper understanding of meanings in the text.

In another important finding, the students were found to perform well in reading narratives than in other text types. This is indeed expected primarily because at their age, students are expected to be more familiar with reading a story book during their early exposure to the text at home, thus, making them better trained in understanding narrative passage (Graesser, McNamara & Kulikowich 2011). Greater emphasis is given to understanding narration that the importance of exposition is not given due emphasis in schools. Despite its importance, the students receive less exposure to expository text in early elementary schools (Duke 2000). It is equally understandable that they were less able to perform in expository as they were less exposed to exposition compared to other text types. This will put them at a disadvantage when they enter tertiary level of education as students are expected to read a wide range of expository texts for their assignments and other educational learning tasks.

Interestingly, one of the most significant finding is that students fared better in argumentation texts than in other texts such as exposition and instruction even though their comprehension performance is below expectation. Argumentative texts focus on relations between concepts and reading it involves mental process of judging (Hatim & Mason 1997). It essentially requires evaluation and analytical skills because argumentative texts promote or evaluate certain beliefs or ideas with conceptual relations such as reason, significance, or opposition frequently. Students find it difficult to engage in argumentative text as it focuses on the relations between concepts and ideas which involve higher-order reading and thinking skills (Hatim & Mason 1997). Thus, it is interesting to find that the students in this study were able to engage in more complex or difficult reading texts. This is particularly important

as many Malaysian educators and researchers often claim that Malaysian university students lack critical reading skills. Therefore, the finding is indeed a good indication of the students' ability in reading a text that requires higher-order reading skills.

Finally, the fact that the students performed poorly in the instructional texts deserves special attention. Reading instructional texts mainly involves reading some instruction on what to do for example reading instructions of a recipe, on some process and procedures and on guidelines to operate digital software. These tasks are deemed easier than exposition and argumentation (Eason et al. 2012). Therefore, it is rather surprising that they were less able to comprehend instructional texts compared to more difficult texts like expository and argumentative texts. This situation suggests that the students were probably not exposed to reading instructional texts resulting in lower ability in comprehending such text.

In summary, the students' overall performance in the three reading aspects and text types underscore the students' cognitive ability and reading interests. These issues are explained further by relating to gender differences in reading performance.

GENDER AND READING ABILITY

The findings of this study have consistently shown that there is a gap in gender differences and reading performance in PISA reading literacy 2012. The findings show that girls were cognitively better than the boys and they probably engage in reading practices more often than the boys. This situation is not a surprising trend because one of the issues pertaining to PISA reading literacy is gender differences in reading performance. Gender is one of the factors that contribute to reading performance in PISA (Shield & Eivers 2009). Findings from PISA consistently show that girls are better readers than the boys; they outperform their male counterparts on all aspects of reading literacy (OECD 2012). Interestingly, the trend is not only prevalent in PISA but also in other standardised tests (Watson, Kehler & Martino 2010). In recent years, it was reported that the gender gap in reading engagement and performance has widened. The students' performances in PISA 2009 showed a larger gender gap in reading literacy than in science and mathematics (OECD 2010). The OECD (2010) reported that on average, a significant difference between genders was found for reading performance (2.8% of girls and 0.5% of boys). In addition, the general trend in PISA also shows that boys were outperformed by girls on all three aspects of reading literacy. Thus, the findings of this study suggest that Malaysian female students also demonstrated better reading performance than the boys across all text types and reading aspects.

The global pattern of gender differences is indeed a very pertinent issue that deserves attention. The difference between the girls and boys has been attributed to reading engagement among the students. Reading engagement is very much related to reading interest. Topic content and interest have been found to influence the boys' and girls' reading performance and engagement (Brantmeier 2001, 2003; Bugel & Buunk 1996) that using a gender-neutral text is probably one of the ways to investigate on gender differences in reading performance (Al-Shumaimeri 2005).

CONCLUSION AND RECOMMENDATIONS

The result of the PISA 2012 reading literacy shows that Malaysian students' reading performance is below the expected average point. This study was carried out to investigate the students' overall reading performance in PISA reading comprehension tasks. The findings on the overall performance of the Malaysian students in PISA 2012 highlight their poor comprehension skills in higher-order reading aspects. In addition, the girls' were better readers than the boys as they outperformed the boys in all reading aspects and text types.

These situations call for drastic actions to address the gap in the students' exposure to different level of text comprehension and text types in their daily reading practices.

There are several implications for the findings gained from this study. First, this study indicates that there is a strong need for the Malaysian Education Ministry to improve the reading policy to focus more on higher-order reading skills that emphasise on analysis, evaluation and interpretation. This further stresses the need to train teachers to encourage these higher-order reading skills to help students to read meaningfully of the text (Pachecho 2010). Higher-order reading skills such as critical reading skills are indeed very important skills to acquire for their future undertakings in college and in working life. Thus, there is a strong need to emphasise on higher-order reading skills at school levels.

Secondly, based on the finding on the students' higher performance in narrative text, there is a strong need to diversify the reading materials at home and schools. It is true that most students spent more time on textbooks and therefore are more exposed to academic books than other reading genres. PISA estimates the students' ability to use their reading experiences in meeting the challenges of the world of work and life beyond schools. Therefore, the reading practices in the classrooms should involve broad variety of texts. This is primarily because different text types require different cognitive skills to achieve comprehension (Eason et al. 2012). The NILAM Program is one of Malaysia's Education Ministry's attempts to promote the reading culture among students. In this nationwide reading program, students are encouraged to read and review story books and they are rewarded according to the number of books reviewed. This program is said to be a success as students' participation in the program has helped to increase the average number of books read by students in a year (Razak 2015). Through this program, students are not only in charge of their own reading materials and reading speed, but this program also promotes reading for pleasure and meaningful reading.

Finally, this study highlighted the marked differences in the reading performance between the girls and boys. This finding demonstrates that there is a significant need to foster greater reading engagement among the boys. One of the factors that potentially affect the boys' reading interest is the topic. Teachers' application of a variety of topics may potentially seize their interests, hence, increase the reading engagement among the boys. In conclusion, PISA reading literacy 2012 provide some invaluable insights into Malaysian students' reading performance and gender attainment on literacy competency.

ACKNOWLEDGEMENT

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ETHICAL APPROVAL

All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards.

INFORMED CONSENT

Informed consent was obtained from all individual participants included in the study.

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