

STUDENTS' READING PERFORMANCE AS MEASURED BY PISA READING LITERACY TEST

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Abstract: This study investigated students' reading literacy performance based on gender. The sample of this study was 285 tenth graders of three public schools in one of the Districts in Palembang who were selected by using a purposive sampling technique. To collect the data, PISA 2009 reading literacy test was distributed to the sample. The data were statistically analyzed. The findings showed that both male and female students' reading literacy were at Level 3 and there were no gender differences in the students' reading literacy performance.

Keywords: *Tenth Graders, Gender Differences In Reading, PISA Reading Literacy Test*

Reading literacy is the ability to understand, use, reflect on and engage with written texts for the purpose of achieving someone's objective, evolving his/her knowledge and potential, and cooperating him/her effectively in society (OECD, 2009). With this in mind, reading is not only to consider the text but also to get something from the text. Through reading, people are able to enrich their knowledge, to understand signs or instructions, to develop their mind and to discover new things. In other words, a person should consider the importance of reading literacy as a functional application of reading for various purposes. Therefore, having good reading ability is important to be started since a very young age.

The importance of reading for students in Indonesia is stated in *Peraturan Menteri Pendidikan dan Kebudayaan* Number 23 Year 2015 (as cited in *Kementerian Pendidikan dan Kebudayaan*, 2016) that every school should provide a time for the students to read continuously as a part of developing their characters. In terms of the English subject, building students' habit in reading to make them become literate is also important as stated in *Peraturan Menteri Pendidikan dan Kebudayaan* Number 68 and 69 Year 2013 that English subject should be taught in schools in Indonesia, especially in secondary schools as a mandatory subject. This is also in line with *Undang-Undang Republik Indonesia* Number 20/2003, Chapter 3, Article 4, Item 5 which states, "Education is conducted by developing culture for reading and writing and, arithmetic, for all members of the community."

However, despite the importance of reading, reading in English is still a challenge for high school students in Palembang. For instance, the national examination's average score of English subject of state senior high school students in Palembang in 2017 was 48.61 (*Kementerian Pendidikan dan Kebudayaan*, n.d.). This included the results of national examination of English subject of public schools 1 and 2 involving in this present study: 42.39 and 41.3, respectively; however, the average score of national examination in 2017 for public school 3 was 74.51. At the international level, the result of English Proficiency Index (EPI) -an online test organized by Education First in 2016 to see the English ability in each country for young people and adults since 2011- showed that Indonesia's score was 52.94 and it was in 32nd place out of 72 countries (*Education First*, 2017).

Indonesian students' reading literacy performance is also low based on the results of a survey conducted by Program of International Students' Assessment (PISA). This survey is conducted every three years and it has been conducted since 2000. The survey assesses reading literacy in the participating countries national language, mathematics and science of 15-year-old students of the OECD member countries and over 30 non-member partner countries. The results of five time surveys have shown that Indonesia's mean score were below OECD average score. For instances, the result of PISA 2009, 2012, and 2015 showed that Indonesia's mean scores were 402, 396, and

397 respectively (OECD 2010a; OECD 2014; OECD 2016). These positioned Indonesia at the ranks 57th and 60th of 65 countries assessed in 2009 and 2012, and 66th of 72 countries assessed in 2015. As previously stated, PISA Reading Literacy Test is in the national language of the participating countries and it is in Bahasa Indonesia for Indonesia. It means that it does not measure the students' English reading proficiency in English. In relation to this, the focus of this present study was measuring students' English reading performance by using PISA 2009 test items which are in English. Therefore, it could provide the information about the tenth graders' reading performance in English. PISA Reading Literacy Test 2009 was selected because the complete test booklet is accessible in the internet. In addition, although PISA Literacy Test 2009 also assessed students' Mathematics and Science performances, it put the main emphasis on Reading.

The importance of Higher Order Thinking Skill (HOTS) was another reason why this present study was conducted. PISA Reading Literacy takes into account HOTS in the items. HOTS is also emphasized in *Kurikulum 2013 (Kementrian Pendidikan dan Kebudayaan, n.d.)*. HOTS includes creative, metacognitive, reflective, logical and critical thinking (King, Goodson & Rohani, 1997). HOTS measurement involves the unfamiliar questions for the students which need to be solved by enabling and applying their higher order thinking skill (King et al., 1997). Similarly, PISA Reading Literacy 2009 includes the items asking the students to identify and apply their knowledge in some unfamiliar situations, which lead them to use their higher order cognitive processes (OECD, 2009). This means that PISA Reading Literacy Test 2009 test items were used by the writer because it provides the complete items as a focus in PISA 2009 and it is reasonable since they are relevant and related to the Indonesian educational system which relates to the HOTS.

Another characteristic which is associated with the students' performance in reading as measured by PISA Reading Literacy Test is gender (OECD, 2002). Gender is the term referring to someone's roles of being male or female from his/her cultural establishment (Neff, 2015). The aim of this present study was to investigate whether or not there was significant difference in the students' reading performance based on gender. Gender is considered as a predictor of the students' performance in reading literacy. As Oxford (1993) states, males tend to be less active than females in using reading strategy. In addition, PISA 2009 and 2012 also found that consistently females outperformed males in reading in all countries assessed (OECD, 2014; OECD 2010a). Likewise, the result of English Proficiency Index (EPI) showed that Indonesian females performed better in English than males (EF EPI, 2017). Although most studies found female students are superior over males in reading, Johnson in 1973-1974 found that male students in England and Nigeria got better results in reading than females. Asgarabadi, Rouhi and Jafarigohar (2015) found that there was no significant difference in EFL students' reading comprehension based on gender. Hence, from the explanation above, it is concluded that gender difference has an influence of students' reading performance.

Method

This study was a quantitative research in which the problem was investigated by exploring something occurs in the field and describing why it happens (Creswell, 2012). The design used as a part of quantitative research was survey research design. According to Creswell (2012), survey research design is a method used to describe the attitudes, opinions, behaviors, or characteristics of the sample by administering a survey to them. In this study, the aim was to describe and compare the students' reading literacy performance based on gender. The schools got involved in this study were three state senior high schools in one of the Districts in Palembang. There were 285 samples selected as the sample of the study.

To collect the data, the students were asked to do the PISA Reading Literacy Test 2009, consisting of 39 questions. In terms of validity of the reading test, OECD (2009) states that PISA 2009 uses high quality instruments which have high levels of validity and reliability for improving students' skills, attitudes and knowledge, and education systems by using steps of strong quality measurement (OECD, 2009). In brief, the items of PISA Reading Literacy Test 2009 were considered valid. The statistical analysis on the internal consistency reliability of the test was 0.844 which was considered good ($0.7 < \alpha < 0.9$) (George & Mallery, 2003). The data were statistically analyzed using Independent Sample t-test to see whether or not there were gender differences in reading literacy performance.

Results

Normality and Homogeneity Tests

As suggested by Park (2003-2005), before the data were analyzed to answer the question proposed, normality and homogeneity of the data were analyzed. The result is presented in Table 1.

Table 1. Normality and Homogeneity of PISA Reading Literacy Performance

Variables	Normality: Kolmogrov- Smirnov	
	Statistic	Sig
Male students	.114	.001
Female students	.072	.034
Test based on gender	Homogeneity	
	Levene Statistic	Sig
	2.537	.112

As shown in Table 1, the p-value of students' data set of Public School 2 was 0.200, higher than 0.05 so that it is concluded that the data set had normal distribution. However, the p-values of the rest data sets were not higher than 0.05. Alternatively, referring to Glencross (1986), the samples which are more than 30 participants are considered to have a normal distribution data set. The samples in this study are more than 30, hence, make the data sets have nearly normal distributions.

In terms of data distribution, the result of Levene test showed that the p-value of students' reading test based on gender was 0.112, suggesting that the two data sets have the same distribution. Notwithstanding, the result of Levene test also shows that the p-value of students' reading test based on school, either in range score 1-100 or PISA level, was lower than 0.05. Azwar (2000) states that the data sets are considered having the same distribution as long as the data sets have the same amount of samples. Since all of the data sets had the same amount of samples, the data were considered homogeneous or had the same distribution.

Students' Reading Literacy Performance

First of all, the students' reading literacy performance of the three public schools was analyzed based on the Standard Score of National Education in Indonesia which is 75.00 (see Table 2).

Table 2. Distribution of Students' Reading Literacy Performance Based on National Education Standard Score

Score	N (%)			Total N (%)
	Public School 1	Public School 2	Public School 3	
≥75	1 (1.1)	2 (2.1)	0	3 (1.1)
≤74.9	94 (98.9)	93 (97.9)	95 (100)	282 (98.9)

Table 2 shows that only 1.1% or 3 students whose scores were above the standard of national education in Indonesia. In detail, one of them was from Public School 1, two were from Public School 2 and there were none from Public School 3.

Second, the students' reading literacy performance was analyzed based on score of PISA Levels (see Table 3).

Table 3. Distribution of Students' Reading Literacy Score Based on PISA Level

School	N	Mean (Level)	N (%)						
			Lv.1a (262-334)	Lv.1b (335-407)	Lv.2 (408-480)	Lv.3 (481-552)	Lv.4 (553-625)	Lv.5 (626-697)	Lv.6 (>698)
1	95	512 (3)	0	4 (4)	22 (23)	39 (41)	28 (30)	1 (1)	1 (1)
2	95	576 (4)	1 (1)	0	18 (19)	18 (19)	25 (26)	23 (24)	10 (11)
3	95	412 (2)	1 (1)	45 (47)	40 (42)	9 (10)	0	0	0
Total	285	500 (3)	2 (1)	49 (17)	80 (28)	66 (23)	53 (19)	24 (8)	11 (4)

Table 3 shows that most students in Public School 1 were at Level 3 (41%), while Public School 2 students mostly at Level 4 (26%) and those from Public School 3 mostly at Level 1b (47%). In total, students of all the three public school were mostly at Level 2 (28% or 80 students). Furthermore, the highest mean score was attained by Public School 2 whose PISA Level was 4, followed by Public School 1 and 2 which were at Levels 3 and 2, respectively. Overall, the mean score of the three public schools was 500, which belonged to Level 3.

Third, the data were analyzed to see the students' PISA reading literacy performance based on gender and Table 4 presents the results.

Table 4. Distribution of Students' Reading Literacy Score based on Gender

Public School	Male (N)	Score			SD	Female (N)	Score			SD
		Min	Max	Mean			Min	Max	Mean	
1	33	16.67	83.30	36.00	12.14	62	11.90	54.76	36.83	8.59
2	40	9.52	80.95	45.95	16.83	55	26.19	73.81	46.32	13.25
3	44	11.90	33.33	20.62	6.20	51	9.52	40.48	22.27	7.54
Total	117	9.52	83.30	33.62	16.38	168	9.52	73.81	35.52	13.91

Table 4 shows that the maximum score (83.30) belonged to male student from Public School 1 while the minimum score (9.52) belonged to both male student from Public School 2 and female student from Public School 3. Although the highest score of reading literacy score was obtained by the male student, all the mean scores of female students of Public School 1, Public School 2, and Public School 3 were higher than the male students' mean score. In other words, the female students outperformed the male students.

In relation to the aim of this present study, which was to find out whether or not there was a significant difference in reading literacy performance between male and female students, the students' scores were statistically analyzed (see Table 5).

Table 5. Result of t-test Analysis

Student	Mean score	Mean difference	Sig.
Female	35.52	1.899	.293
male	33.62		

As shown in Table 5, there was no significant difference in reading literacy performance between male and female students.

Discussion

As shown in the findings, in terms of range of score 1-100, the highest mean score of was attained by the students of Public School 2 (46.16), followed by Public School 1 (36.55) and Public School 3 (21.50). This finding is in line with the scores of national examination in English subject in which Public School 2 had the highest mean. However, the scores of those three schools were still below the Indonesian standard of national education score which is 75.00 (Direktorat Pembinaan SMA, 2010).

The results of students' reading literacy were also analyzed based on PISA Levels, in which the result was similar with those based on range of score 1-100. The highest score was attained by Public School 2 (576) and it was categorized in Level 4. Based on the description of PISA Level of reading score, students at Level 4 are able to comprehend difficult reading material, such as finding implicit information, interpreting the meaning of nuanced language, and evaluating the text critically (OECD, 2010b). The score of Public School 1 was 512 which was at Level 3. Students at level 3 are able to comprehend moderate reading material, such as findings multiple pieces of information, combining different parts of text, and connecting it with their daily knowledge (OECD, 2010b). The lowest score was attained by Public School 3 (412) which was categorized in Level 2. Students at level 2 in some cases are able to find information of the text, make single comparison and relate the text with their personal experiences (OECD, 2010b). On average, the reading literacy of students of the three public schools was at Level 3 of PISA Levels and categorized as 'moderate performers' (OECD, 2010b).

In relation to gender, as reported in the findings, the female students' mean score (35.52) was slightly better than the male students' (33.62) as measured by range of score 1-100. In addition, based on PISA Levels, the female students also scored slightly better than the male students. In

fact, both were at Level 3, in which the ability of the students is the same as mentioned in previous paragraph. Eventhough female students got slightly higher mean score, there were none of them whose score was above the Indonesian Standard of National Education score. In contrast, there were 3 male students whose scores were above 75.00 (one of them was from Public School 1 and the rest were from Public School 2).

Next, the statistical analysis that was conducted showed that there was no significant difference in reading performance between male and female students. This finding is supported by Asgarabadi, et al. (2015) who found that there was no significant difference in reading based on sex or gender. Based on the findings of this study it can be concluded that the female and male students of the three public schools demonstrated an equal performance in reading as measured by PISA Reading Literacy Test 2009.

Conclusion

Reading in English is importance of the secondary school students in Indonesia because English is a compulsory subject and it is one of the subjects included in the Indonesian National Exam. Therefore, having a good performance in English is importance for the students. However, the findings of this study showed that the students did not demonstrate a good performance English reading. In addition, there was no significant different in reading performance between male and female students, suggesting that both male and female demonstrated an equal performance in English reading. In this case, their English reading performance was not satisfactory. This suggests that more effort has to be done both by the students themselves and the schools (i.e., English teachers) in order to improve their English reading performance.

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