

# **Secondary school students' English literacy achievement based on PISA reading literacy test 2009**

**Soni Mirizon\***

*Sriwijaya University, Palembang, Indonesia*  
*smirizon@unsri.ac.id*

**Machdalena Vianty**

*Sriwijaya University, Palembang, Indonesia*  
*machdalenavianty@unsri.ac.id*

**Ida Rosmalina**

*Sriwijaya University, Palembang, Indonesia*  
*ida\_rosmalina@unsri.ac.id*

**Erlina Erlina**

*Sriwijaya University, Palembang, Indonesia*  
*erlina@fkip.unsri.ac.id*

*Manuscript received April 24, 2021, revised August 29, 2021, first published November 1, 2021, and available online November 7, 2021. DOI: 10.22373/ej.v9i1.10492*

## **Recommended APA Citation**

Mirizon, S., Vianty, M., Rosmalina, I., & Erlina, E. (2021). Secondary school students' English literacy achievement based on PISA reading literacy test 2009. *Englisia: Journal of Language, Education, and Humanities*, 9(1), 165-182. <https://doi.org/10.22373/ej.v9i1.10492>

## **ABSTRACT**

Reading literacy has become global concern that Organisation for Economic Co-operation and Development (OECD) has conducted Program for International Student Assessment (PISA) reading literacy test to assess what students know and can do in reading. Participating in PISA test since 2000, Indonesian students' reading literacy has not shown a significant improvement. Because PISA reading literacy test is adapted into language of instruction of each participating country, it is Indonesian students' reading literacy in Indonesian language which is not satisfactory. Considering the fact that Indonesian fifteen-year-old students study English as a compulsory subject, investigating students' reading literacy in English is considered important. There has

---

\* Corresponding author

been much research investigating issues in reading achievement in Indonesia, but there are limited studies focussing on PISA reading literacy based on school location, school accreditation, gender, and academic major. Employing survey study design, this study assessed reading literacy of two thousand and two hundred secondary school students sampled from twenty four public secondary schools accredited A+, A, and B in Palembang. Data were obtained using PISA reading literacy test 2009 and were analysed statistically. The findings revealed that students' English literacy was in level 3 (low category). Students studied at schools in central urban district performed better than those of in peri urban district. Those from secondary schools accredited A+ outperformed their counterparts in schools accredited A and B. Female students performed slightly better than male. Students majoring in science were better than those of majoring in social. The results lead to the conclusion that students' English literacy achievement should be enhanced using innovating strategies to achieve targeted literacy level that is needed to survive in school academic life.

**Keywords:** *English literacy; PISA reading literacy test; Secondary school students*

## **1. Introduction**

Reading is not merely able to comprehend written text but is also able to make meaning from what is read (Roe, 2014). Meaning deals with context and is derived from one's prior knowledge (Cook, 2008). It is the ability to decode messages presented and correctly understand them (Grabe & Stoller, 2002). In reading, it is not a matter of decoding the messages but also recalling previous knowledge and making meaning from what is read. Reading provides access to crucial information at work and in school (Komiyama, 2009). It is for the society as well for each individual. For Indonesian secondary students (Year 7-12), reading in Indonesian language as well as in English is important that it can help students access the information they need for studying. In addition, both Indonesian language and English are the compulsory subjects for Indonesian secondary students (Lauder, 2008). Therefore, having good reading skills is very important for the students.

The importance of reading has become a global concern that Organisation for Economic Co-operation and Development (OECD) has conducted Program for International Student Assessment Program for International Student Assessment (PISA) Reading Literacy Test to assess what students are familiar with and able to do in reading. According to OECD (2016, p. 9), "reading is usually figured out as the process of interpreting silently or practicing loudly". Therefore, OECD uses the term "reading literacy" which is based on PISA 2009, 2012 and 2015 and is described as "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, 2016, p. 6). OECD (2016) believes that reading literacy is crucial for students' personal life and their role in taking part in the community irrespective of their academic life need and labour-force demand. Referring to what the scholars have stated, OECD believes that reading literacy achievement is not only the basis of other subject achievement but also a determinant of most adult life success (Cunningham &

Stanovich, 1998; OECD, 2013a; Smith, Mikulecky, Kibby, Dreher, & Dole, 2000).

PISA Reading Literacy test is for students aged 15 who are selected from the end level of compulsory education, usually at year 9, of participating countries (Thomson, Hillman, & De Bortoli, 2013). In accordance with this, the aims of PISA assessment is “to measure how well young adults, at age 15 and therefore near the end of compulsory schooling in most participating education systems, have acquired and are able to use knowledge and skills in particular areas to meet real-life challenges” (Thomson et al., 2013, p. 2). In other words, this international assessment is meant to map reading literacy of students at their compulsory education level of the participating countries.

Indonesia is one of the countries participating in PISA assessment. However, Indonesian students did not show satisfactory results in reading literacy. It was reported that Indonesia ranked in 57<sup>th</sup> of 65 countries in 2009 (OECD, 2010) and 60<sup>th</sup> of 65 countries in 2012 (OECD, 2013b). The result of PISA Reading Literacy test in 2015 has not shown a significant improvement but it lifted up Indonesia six ranks from its last position in 2012 (Kementerian Pendidikan dan Kebudayaan, 2016). Since PISA Reading literacy test is adapted into language of instruction of each participating country, it is Indonesian students’ reading literacy in Indonesian language which is not satisfactory.

Considering that English is also the compulsory subject for the Indonesian secondary school students (Year 7-9), investigating students’ reading literacy in English is worth doing. It is due to the fact that English has been being taught to secondary school students for decades but it is found that the results were not satisfactory yet. Literacy still becomes problematic for Indonesian students compared to other South Asian nations (Dilas, Mackie, Huang & Trines, 2019). Although they study the four language skills in English, which are all important, but reading is the foundation of the other three language skills, as pointed out below.

Reading is an essential skill for learners of English. For most of learners it is the most important skill to master in order to ensure success in learning. With strengthened reading skills, learners of English tend to make greater progress in other areas of language learning (Anderson, 2003, p. 2)

It is apparent that having good skill in reading facilitates learners in accessing information which is necessary to support their academic life. As Anderson (2003) pointed out, reading is the language skill that can help the successful learning of the other language skills: listening, speaking and writing. Having the information concerning English reading literacy of the students can provide a picture about how well the students can access and get the information, integrate, interpret and evaluate what they have read.

There are a lot of studies investigating issues in reading achievement in general and in English in international setting. There also has been much research investigating

issues in reading achievement in English in Indonesia, but there are limited studies focussing on PISA reading literacy based on the variables of this current study. This study aims at reporting the reading literacy in English as measured by PISA 2009 of Year 10 students sampled from twenty four state senior high schools in Palembang, Indonesia based on school location, school accreditation, gender, and students' major.

## **2. Literature review**

PISA which is instigated by OECD is an international measure which aims to map 15 year old randomly selected students' literacy achievement in reading, mathematics, and science. The results of the PISA study are presented in the form of information about students' knowledge, skills, and competencies. According to Yusuf (2008), Literacy Team Reading Center for Education Assessment of Ministry of National Education, PISA study results can be used as comparative in the formulation of policies in improving the quality of basic education in Indonesia, especially in determining the threshold and ideal threshold (benchmark) on 3 cognitive domains, i.e. reading, mathematics, and science at the end of compulsory school age. In addition, the PISA study results can also be obtained from some contextual indicators of student demographics, schools, teachers, and other variables that influence student knowledge, skills and competence (OECD, 2009).

In the past century, literacy has generally been attributed only to the ability to communicate in writing (Dando, 2016). The traditional conceptions of the literacy notion also occur in the field of mathematics. Until a few years ago, mathematics education was a means used to provide scientific knowledge and skills in mathematics that is needed in a livelihood financially and professionally (Ojose, 2011). However, In PISA, mathematics literacy refers to the ability someone has in recognizing and understanding mathematics role in life, creating a good foundation of understanding, and communicating mathematical knowledge and skills effectively, and capable of answering and explaining mathematical problem related to numbers (OECD, 2009). Parallel to the idea of mathematical literacy based on OECD 2009, the notion of mathematical literacy in modern life is now generally defined as a unity of knowledge, understanding, and skills that people need to function effectively in modern life (Yusuf, 2008). In PISA, there are three major components of mathematical literacy assessment namely process component, content component, and context component. In process component, assessment is used to observe student competence in reasoning, analyzing, communicating idea, and formulating and solving problem. In content component, mathematical content that needs to observe are change, relationship, space, and shape. In the third component, context of mathematics application, mathematical content is the abstraction of results in hundred years of human civilization. As a result, what learned in mathematics has frequently become very abstract, very far from the context of application. In mathematical literacy, context of mathematics application component has crucial portion which means that students do not only need to adequately understand

mathematics but have to be able to make reason and solve problem with mathematics, also required to understand its application and carry out the application.

Nowadays, the development of modern society has turned bringing about a change that one is required for the literature of science. According to OECD (2015), “PISA identifies science literacy as the ability to use science knowledge, identifies problems, and draws conclusions based on evidence, in order to understand and make decisions about nature and changes made to nature through human activity” The notion of science literacy as mentioned above does not mean that someone is required to master more science knowledge, but more importantly is capable of thinking scientifically (scientific thinking) and apply it in the context of the problem in national, social, and global context (Yusuf, 2008). In science literacy assessment, there are three main aspects identified by PISA, i.e. science process, science content, and context of science application. In science process, PISA sees science education as a process to prepare future citizen who are able to participate in the society who are affected by the advancement of science and technology, so that it is necessary to develop student competence to understand the essence of science, procedure of science, and the strength and weakness of science, including kinds of questions that can or cannot be answered by science, know what evidence needed in science investigation, and know which conclusion appropriate with existing evidence. In science content, PISA does not limit the scope of science to the content stated in the curriculum of science at school but involves knowledge that is important for science literacy including the ones which can be obtained from other sources outside of school curriculum. In the context of science application, PISA stresses on the importance of understanding the context of science application and able to put it into application in solving real problem students face related to their personal, local community where they belong, and in global life.

According to OECD (2010), reading literacy is the ability to understand, use, and interpret the content of reading that aims to achieve one goal of developing knowledge and abilities, and participate in society. In reading literacy, PISA measures three main literacy processes: the ability to seek and find information, the ability to develop meaning and interpret reading content, and the ability to reflect and evaluate the content of the reading in relation to the experience day-to-day, previously acquired knowledge, and the development of ideas from the information it acquires. Reading literacy is categorized into four specific objectives, namely: functional reading literacy, reading literacy in the workplace, content reading literacy, and critical reading literacy (Yusuf, 2008). Functional reading literacy is the ability to seek information useful for certain need. It focuses on the reading ability for certain objective in daily life such as looking for specific information in newspaper, magazine, traffic lights, and other public information. Reading literacy in the workplace includes skills in applying reading literacy strategies in working in various situations. Content reading literacy refers to the reading ability to seek new information about the content of knowledge, including

reading ability in general, knowledge about certain discipline known, and reading ability in particular discipline. Critical reading literacy involves the ability to deal with questions which require answers through proposing hypothesis, making conclusion from implicit questions, and evaluating and giving opinion toward certain issues.

### 2.1. PISA and reading literacy

Reading literacy aims to determine the ability of students in understanding, using, and identifying the information contained in the reading as well as reflecting and evaluating the reading (reflecting on written text) (OECD, 2009). PISA aims to measure how well students, toward the end of their compulsory education age, are prepared to face the challenges of today's life. Therefore, the literacy concept developed in PISA refers to the students' capacity to apply knowledge and skills in analyzing, constructing arguments, and communicating effectively when dealing with, solving and interpreting problems in different situations. In this respect, the literacy instrument developed in PISA is used to measure literacy skills based on 6 levels of reading ability, as described in Table 1 below.

**Table 1**

Summary of description for the even levels of proficiency in reading.

Level	Score	Characteristics of Tasks
6	698	Tasks at this level typically require the reader to make multiple inferences, comparisons and contrasts that are both detailed and precise.
5	626	Tasks at this level that involve retrieving information require the reader to locate and organize several pieces of deeply embedded information, inferring which information in the text is relevant.
4	553	Task at this level involve retrieving information require the reader to locate and organize several pieces of embedded information.
3	480	Tasks at this level require the reader to locate, and in some cases recognize the relationship between several pieces of information that must meet multiple conditions.
2	407	Some tasks at this level require the reader to locate one or more pieces of information, which may need to be inferred and may need to meet several conditions.
1	Below - 407	Tasks at this level require the reader to locate one or more independent pieces of explicitly stated information, to recognize the main theme or author's purpose in a text about a familiar topic, or to make a simple connection between information in the text and common, everyday knowledge.

(Source: OECD, 2010)

According to OECD (2009, p. 25), literacy assessment of PISA reading is based on three main dimensions, namely (1) situations—the range of texts that have been read when reading occurs, (2) the text—the scope of material read, and (3) aspect—cognitive approach how reader deals with reading materials. Text types include prose text (such as stories, articles, and manual texts) and non-continuous text (such as graphics, images, maps, schemes, tables, and advertisements) that reflect various uses or settings where

knowledge and skills are used. PISA text type measures “three reading processes, namely the ability to search and locate information; develop interpretation, reflect and evaluate the content of a text, and reflect and evaluate the text form” (U.S Department of Education, 2010).

## 2.2. PISA reading literacy level of Indonesian students

According to the Education Sector Analytical and Capacity Development Partnership (ACDP) Indonesia (2015), Indonesia became the 4<sup>th</sup> fastest country in terms of overall student achievement—and not partial—by 22.1 points reflecting improvements to its education system, countries included in the PISA test. However, reading literacy of Indonesian students was still classified as very low compared to 15-year-olds at international level. According to PISA 2009, reading literacy includes the skills of finding information, understanding and interpreting the reading, as well as reflecting and evaluating what it reads.

Based on OECD PISA 2009 data, from 65 countries surveyed, Indonesian students ranked 57<sup>th</sup> with an average of 402. One to ten places were held by students from other developed countries. It indicated that Indonesian students’ ability was below the students of Indonesia's neighboring countries, namely Thailand ranked 50<sup>th</sup> with a value of 421.

According to the Literacy Team of the Center for Educational Assessment of the Ministry of National Education (2011), the PISA study results showed that a number of “31.1% of Indonesian students are below Level-1, 37.6% are at Level-1, 24.8% are in Level-2, 6.1% Level-3, and only 0.4% are at Level-4, and no one had scored on Level-5”. Ability for each of these levels was still far below the average capability of the countries surveyed. For *retrieving information*, the survey results showed that as many as 42.9% of Indonesian students are were below Level-1, 31.5% at Level-1, 19.5% at Level-2, 5.5% at Level-3, and only 0.6% were at Level-4, and no one was at Level-5. Likewise for the skills to *understand and interpret* the more difficult readings of the first skill, the survey showed that as many as 27.6% of students were below Level-1, 40.3% were at Level-1, 26.1% were at Level-2, 5.7% were at Level- 3, 0.3% were at Level-4 and none at Level-5. At the most difficult skill level, the skills of *reflecting and evaluating* the content of the reading, the survey illustrated that 32.5% of Indonesian students were under Level-1, 28.7% were at Level-1, 24.3% were at Level-2, 11.2% Level-3, 2.9% were at Level-4, and 0.4% at Level-5.

These international measures labeled that Indonesian student literacy apparently was still below the average of international students. It implies that attention in enhancing reading literacy of Indonesian students should be paid and necessary action to upgrade Indonesian student literacy should be taken so that they become more literate and are able to retrieve necessary information needed to support their academic life.

### *2.3. School location*

Previous studies indicated school location may affect student achievement in various fields. Owoeye and Yara (2011) conducted a study investigating whether school location related to student academic performance in Nigeria. The study involved students from 50 secondary schools both in urban and rural areas. It was found that there was a discrepancy of students' academic achievement where students in urban areas outperformed their counterparts in rural areas. Similarly, Adepoju (2001) did a survey in 100 secondary schools looking at the influence of schools location on student performance. It was revealed that there was a significant relationship between schools location and academic performance in English and mathematics in urban and rural places where students in urban schools overtook their colleagues in rural areas. Likewise, Warwick (1992) carried out a study in fifty countries surveying reading literacy of 9-14 years old students. The findings showed that students who studied in schools located in urban areas had better achievement in reading literacy compared to those who studied in rural areas schools. Also, Osokaya and Akuche (2012) examined school location influence on secondary students' achievement in physics by giving intervention to more than 500 secondary school students from eight secondary schools. The results indicated that there was a significant effect of school location on students' cognitive achievement and practical skills performance. Akinwumi (2017) investigated school location impact on English reading achievement of 270 students from nine public secondary schools in applying a quasi-experimental design involving experimental and control group. It was found that in the experimental group students from urban schools showed better achievement than their rural counterparts in reading comprehension, inferring word meanings.

### *2.4. School accreditation*

Accreditation refers to a process of external quality review created and used to scrutinize schools and universities for quality assurance and improvement. According to Ewell (2001), in accreditation an institution is required to examine its institutional effectiveness through self-study and review process. As stipulated in Law No.20/2003 about National Education System that accreditation is required to determine whether a school is operationally qualified formal/non-formal education unit in a given level. In Indonesian secondary school, accreditation is carried out by the government through the National Accreditation Board for Schools/Madrasahs (BAN S/M).

School accreditation status is assumed to be related to its school community. An accredited school is often associated with qualified teachers, administrators, and leaders. Despite the fact that a school has been accredited, it does not mean that it is free from any problems. Haryati (2014) pointed out that although a school is accredited A or B, it does not mean that everything is perfect. School accreditation status does not guarantee its students good achievement. A study by Yustika, Diem & Petrus (2019) reported that school accreditation status and teachers' performance did not have any influence on

students' English achievement in secondary schools in South Sumatera. In line with this, Kurniawan (2018) and Darusmiati (2018) found that there was no correlation between school accreditation status with students' English achievement in public vocational and high schools. However, Siahaan (2018) reported different result that there was significant correlation between school accreditation status and students' English achievement in private senior high schools.

### *2.5. Gender and reading ability*

Among several factors that affected reading ability, previous research findings showed that gender was one of the factors that may affect the ability to read. Logan and Medford (2011) reported that male students were deeply involved in reading activities, while female students were not. This is contrary to the results of PISA research findings on the three countries studied (USA, UK, and Ireland) that women had more positive attitude toward reading, read more often, and outperformed men in reading skills (Kirsch et al., 2002). In terms of choosing the type of reading, it was found that women tended to read longer texts to read for pleasure, such as novels while men preferred to read short, informative texts such as newspapers, comics, emails and websites. Meanwhile, a study conducted by Carroll and Fox (2017) showed no distinction between male and female students in terms of reading ability. Akinwumi (2017) also found no significant difference in reading achievement of male and female students. In addition, similar trend was reported that reading achievement between female and male students was not far different, except that male students were more expressive than female students (Diem & Lestari, 2016). In line with this, Mirizon, Diem and Vianty (2018) in their study also discovered that significant difference was not found between female and male students. There was no significant difference found in the students' English comprehension between males and females. It could be inferred that there was still a dispute about the role of gender in reading ability. Therefore, this study tries to look at the role of gender in a more specific context, which is the ability to read based on PISA using English as a foreign language.

### *2.6. Academic major*

In Indonesian society, it was believed that different academic major at secondary school may show different achievements. Natural science major students are considered more competent than social science students. They also have more opportunity and choices to pursue higher education compared to their counterparts majoring in social science. They are allowed to choose education field in social science whereas their counterparts are not. However, no prior research has been found to report to student achievement related to school major. Therefore, investigating the extent to which academic major affects student achievement in school is crucial.

### 3. Method

#### 3.1. Participants and data collection

This study involved 2,202 students from 24 public senior high schools in Palembang. They were selected purposively based on the grade level, that was grade 10<sup>th</sup> students, considering that they were in the age of 15 years old as it is required by PISA. Every school was represented by one class of science majoring students and one class of social majoring students.

The instrument used for data collection was a ready-made test, Reading Literacy PISA test 2009 which consisted of 39 items. Students were asked to do the test to find out about their performance of reading literacy in English. Since this kind of test had been used many times across countries, certainly its validity and reliability had been measured so trying out the test again was unnecessary.

#### 3.2. Data analyses

Students' scores obtained from this research were analyzed using Descriptive Statistics. Then to see the specific information, the score was categorized based on the districts of the school location in the city, school accreditation, gender, and students' academic major.

### 4. Findings

The data obtained from PISA Reading Literacy Test 2009 instrument were analyzed descriptively. The total mean score of the students' competence is shown in Table 2.

**Table 2**

Senior high school students' reading literacy test results (N=2,202).

	Percentage	PISA Level
N Valid	2,202	2202
Missing	0	0
Mean	24.5112	497.809
Std. Deviation	12.63771	75.37662
Minimum	0.00	341.48
Maximum	83.33	719.76

It is apparent that the average score of the students' reading literacy test result of the 24 state senior high schools in Palembang city is 497.809 (Level 3) which is equal to 24.51% (low category) which is distributed in 341.48 (the lowest score obtained) and 719.76 (the highest score obtained).

When the data were categorized based on the districts where the schools located, it was revealed that students studied in schools of certain district performed better than their counterparts in the other districts. Of the 13 districts in Palembang city, students whose schools located in the Sukarami district (urban area) performed relatively better (mean =579.96) than those whose schools located in other districts, whereas students

whose schools located in the Gandus district (rural area) performed the worst (mean=389.03), as shown in Table 3 below.

**Table 3**

Senior high school students' reading literacy test results based on school districts.

District	N	Mean	Level	SD	SE	95% Confidence Interval for Mean		Min.	Max.
						Lower Bound	Upper Bound		
						Seberang Ulu 1	178		
Seberang Ulu 2	125	512.68	3	79.966	7.1523	498.53	526.84	362.57	758.21
Plaju	76	443.63	2	62.977	7.2240	429.24	458.02	324.88	588.65
Kertapati	125	469.13	2	69.227	6.1919	456.87	481.38	306.04	682.85
Iilir Barat 1	377	490.65	3	104.901	5.4026	480.03	501.27	306.04	871.25
Iilir Timur 1	104	507.85	3	64.982	6.3720	495.22	520.49	362.57	682.85
Iilir Timur 2	178	521.97	3	66.395	4.9765	512.15	531.79	343.73	701.69
Kalidoni	100	530.99	3	101.610	10.161	510.84	551.16	324.88	777.05
Kemuning	178	511.38	3	74.156	5.5582	500.41	522.35	306.04	758.21
Sako	212	451.43	2	68.570	4.7094	442.15	460.72	306.04	720.53
Sukarami	282	579.96	4	118.742	7.0710	566.04	593.88	381.41	965.45
Alang-alang lebar	99	518.81	3	89.963	9.0416	500.86	536.75	362.57	833.57
Gandus	168	389.03	1	48.975	3.7785	381.57	396.49	306.04	569.81
Total	2202	500		100	2.1310	495.82	504.18	306.04	965.45

(SD=Std. Deviation; SE=Std. Error)

The students' reading score were also categorized based on the status of school accreditation. It was found out that the student whose school accredited A+ performed better than those whose schools accredited A and B (see Table 4).

**Table 4**

Senior high school students' reading literacy test results based on school accreditation status.

School	N	Mean	Level	SD	SE	95% Confidence Interval for Mean		Min.	Max.
						Lower Bound	Upper Bound		
						PS1	99		
PS2	89	513.71	3	105.740	11.208	491.44	535.99	325	871
PS3	84	478.97	2	79.135	8.634	461.80	496.14	306	758
PS4	76	443.63	2	62.978	7.224	429.24	458.02	325	589
PS5	84	527.87	3	64.827	7.073	513.80	541.93	381	702
PS6	94	540.35	3	55.503	5.725	528.98	551.71	419	664
PS7	100	531.00	3	101.611	10.161	510.84	551.16	325	777
PS8	125	512.68	3	79.966	7.152	498.53	526.84	363	758
PS9	125	469.13	2	69.228	6.192	456.87	481.38	306	683
PS10	92	508.37	3	93.008	9.697	489.11	527.63	344	702
PS11	97	426.47	2	71.461	7.256	412.06	440.87	306	664
PS12	94	384.61	1	50.466	5.205	374.28	394.95	306	532
PS13	95	595.19	4	78.395	8.043	579.22	611.16	400	965

PS14	106	432.77	3	75.205	7.305	418.29	447.26	306	721
PS15	104	507.85	3	64.983	6.372	495.22	520.49	363	683
PS16	106	470.10	2	55.584	5.399	459.39	480.8	306	607
PS17	92	671.38	5	118.827	12.389	646.77	695.99	381	947
PS18	94	516.69	3	67.674	6.980	502.83	530.56	344	683
PS19	65	475.32	2	80.036	9.927	455.49	495.15	306	645
PS20	74	394.64	1	46.749	5.434	383.81	405.48	306	570
PS21	95	476.20	2	55.131	5.656	464.97	487.43	381	626
PS22	99	518.81	3	89.963	9.042	500.86	536.75	363	834
PS23	26	443.00	2	50.147	9.835	422.74	463.25	344	513
PS24	87	590.16	4	75.701	8.116	574.03	606.3	419	777
Total	2202	500		100	2.131	495.82	504.18	306	965

As shown in Table 4, Public school 17 and Public school 24 had the highest mean scores (671.38 and 590.16 respectively) compared to the other schools. These two schools were accredited A+, while other schools (Public schools 1, 2, 3, 4, 6, 8, 10, 13, 14, 19) were accredited A and B (Public schools 5, 7, 9, 11, 12, 15, 16, 18, 20, 21, and 23).

Furthermore, when the data were categorized based on gender, it was found that female students outperformed their male counterparts with mean score 503.31 as compared to 494.78 respectively, as shown in Table 5 below.

**Table 5**  
Senior high school students' reading literacy test results based on gender.

Gender	N	Mean	Level	SD	SE	95% Confidence Interval for Mean		Min.	Max.
						Lower Bound	Upper Bound		
Female	1347	503.31	3	95.031	2.5893	498.23	508.39	306.04	890.09
Male	855	494.78	3	107.211	3.6665	487.58	501.97	306.04	965.45
Total	2202	500		100	2.1310	495.82	504.17	306.04	965.45

In terms of academic major, students majoring in natural science (mean=517.56) had better English literacy achievement than those of studying in the social science major (mean=455.49) as displayed in Table 6 below.

**Table 6**  
Senior high school students' reading literacy test results based on academic major.

Major	N	Mean	Level	SD	SE	95% Confidence Interval for Mean		Min.	Max.
						Lower Bound	Upper Bound		
Science	1579	517.56	3	97.808	2.4614	512.731	522.387	306.04	965.45
Social	623	455.49	2	91.375	3.6609	448.307	462.685	306.04	946.61
Total	2202	500		100	2.1310	495.820	504.179	306.04	965.45

## 5. Discussion

The findings of this study indicate that school location seems to play crucial role

in English literacy achievement of students. It is assumed that the farther the location of the schools district from the centre of business district (CBD) the lower the students English literacy achievement would be. It is likely due to the facts that schools located in CBD have many advantages compared to the ones located farther from CBD, such as there are more English supplementary courses offered after school hours available in CBD area. In addition, in terms of accessibility, such as transportation, is available almost 24 hours and easier to find even in the evening. In this case, students have an ease in taking extra hours for studying English after school without being worried of unable to get a bus to go home. In other words, students whose school district location is in CBD area are likely to be benefited compared to their counterparts whose schools district location are not located in the CBD area. This finding is in line with the study of Mirizon, Diem, and Vianty (2018) where school location affects students English comprehension skills.

Previous related studies also indicated that student academic achievement was affected by school district location. Students whose school situated in urban areas showed better academic achievement as compared to those schools situated in rural areas (Owoeye & Yara, 2011). Other studies also reported students in urban schools manifested more brilliant performance than students in rural areas (Adepoju & Akinwumi, 2001; Jakaitiene, Želvys, Dukynaitė, & Vaitekaitis, 2020; Nnenna & Adukwu, 2017; Warwick, 1992; Xu, 2009). These studies indicated that school location could become determining factor that may influence student achievement in many subjects. It may be caused by some factors where school located in urban or CBD area have better teachers, supplied with better ICT, provided with support services, and better infrastructure compared to school located in rural or not in CBD area. Certainly more research on school location and student achievement is needed (Othman & Muijs, 2013).

In terms of school accreditation status, it is logical that students who study in a school which has better accreditation are likely to have better achievement. In other words, it is not wrong to say that the better the accreditation status of a school is, the better the English literacy achievement of its students would be. It is proven in the findings of this study that schools accredited A+ (Public school 17 and Public school 24) had better mean score in their students' English reading literacy achievement than those of the other schools accredited A and schools accredited A had better achievement in their students' English reading literacy achievement than those of the other schools accredited B. This finding is in line with previous study carried out by Siahaan (2018) where better accredited schools had better students' academic achievement. This trend makes sense since schools with A+ accreditation have better students input than schools accredited in A and B since only prospective students with very good achievement are accepted in the student recruitment. Furthermore, school with A+ accreditation are supported with more complete infrastructure and facilities and much government

funding compared to the other schools accredited A and B.

In relation to gender, the finding of this study reveals that female students slightly had better mean score (503.31) than male students (494.78). Previous studies related to academic achievement in general also indicated that female students performed better than their male counterparts in many parts of the world such as in Australia, USA, and China (Chiu & Chang, 2006; Dee, 2005; Rothman, 2002), but in this study, such a difference was not that significant. Similar finding was also found in Mirizon, Diem, and Vianty (2018) where female students outperformed slightly better than their male counterparts in English specific comprehension skills. Similarly, Voyer and Voyer (2014) found that female students showed better achievement in language but male students outperformed them in mathematics achievement. This gender disparity in academic achievement had been subject of much discussion and ended up in different findings. These findings may suggest that gender is not the only factor that may influence students' English literacy achievement.

When students' English reading literacy achievement was seen based on their academic major, it was found that those majoring in science performed better (mean =517.56) than those majoring in social (mean=455.49). It is presumably related to the selection criteria in determining students' major that are commonly conducted by schools. School usually place students with better achievement in science major while social major is provided for students with average achievement. The learning atmosphere of these two majors is likely to be different as well where science major is more advantageous to have better achievement students than social major with average achievement students. This condition may contribute to different academic performance of students.

## **6. Conclusion**

Reading is important for students that it can support their academic life. The students' reading literacy can determine their academic performance; it is through reading textbooks or other reading materials the students can gain information they need to do or complete their school assignments. As shown by the findings of this study, the secondary students' reading performance as measured by PISA Reading Literacy test 2009 was not satisfactory. There are many factors that may cause this low achievement. Therefore, knowing the students' reading performance is extremely important for the teachers as well as the schools that it can provide them with the information about how well their students perform in reading English texts and sources. Since students have to learn English as an obligatory subject at secondary schools in Indonesia, the teachers or the schools can do an effort, such as by providing an intervention program, to help the students improve their reading literacy, disregarding where they go to schools, what their major is, what their gender is, and what accreditation status of the school they attend.

## References

- Education Sector Analytical and Capacity Development Partnership. (2015). *University-government-industry partnership for economic development in Indonesia*. Education Sector Analytical and Capacity Development Partnership (ACDP). Retrieved from <http://hdl.handle.net/11540/4388>. License: CC BY 3.0 IGO.
- Adepoju, T. (2001). *Location factors as correlates of private and academic performance of secondary schools in Oyo State*. A Proposal presented at the higher students. Joint Staff Seminar Department of Teacher Education, University of Ibadan, Ibadan.
- Akinwumi, O. (2017). Effects of gender and school location on the Ekiti State secondary schools students' achievement in reading comprehension in English language. *Journal of Education and Practice*, 8(5), 50-55.
- Anderson, N. J. (2003). Scrolling, clicking and reading English: Online reading strategies in a second/foreign language. *The Reading Matrix*, 3(3), 1-33.
- Kementerian Pendidikan dan Kebudayaan. (2016). *Peringkat dan Capaian PISA Indonesia Mengalami Peningkatan*. Retrieved from <https://www.kemdikbud.go.id/main/blog/2016/12/peringkat-dan-capaian-pisa-indonesia-mengalami-peningkatan>.
- Caroll, J. M., & Fox, A. C. (2017). Reading self-efficacy predicts word reading but not comprehension in both girls and boys. *Frontier in Psychology*, January vol. 7.
- Chui, M. M., & McBride-Chang, C. (2006). Gender, context, and reading: A comparison of students in 43 countries (Research Report: Chinese University of Hong Kong).
- Cook, V. (2008). *Second Language Learning and Language Teaching*. Oxford, UK: Oxford University Press.
- Cunningham, A. E., & Stanovich, K. E. (1998). Early reading acquisition and its relation to reading experience and ability 10 years later. *Developmental Psychology*, 33, 934-945.
- Dando, P. (2016). School librarians are well-positioned for making significant contributions to reading development by focusing on the integration of critical thinking and traditional literacy: The interactive read-aloud is a key strategy. *Traditional Literacy and Critical Reading*, 44(5), 9-12.
- Darusmiati, P. (2018). *The correlation between school accreditation and students' English achievement of public senior high schools* (Undergraduate thesis). Sriwijaya University, Fakultas Keguruan dan Ilmu Pendidikan, Palembang, Indonesia.
- Dee, T. S. (2005). Teachers and the gender gaps in students' achievement. NBER Working Paper No. 11660 Cambridge, MA: National Bureau of Economic Research.
- Diem, C. D., & Lestari, P. (2016). Interaction effects of LCS and gender on tenth graders' English achievements. A paper presented at the Fourth 21st Century Academic Forum, at Harvard, Boston, Massachusetts, USA. Retrieved from [https://www.21caf.org/uploads/1/3/5/2/13527682/4hrd-3041\\_diem\\_c.pdf](https://www.21caf.org/uploads/1/3/5/2/13527682/4hrd-3041_diem_c.pdf).

- Dilas, D. B., Mackie, C., Huang, Y., & Trines, S. (2019). *Education system and profiles: Education in Indonesia*. Retrieved from <https://wenr.wes.org/2019/03/education-in-indonesia-2>.
- Ewell, P. T. (2001). *Accreditation and Student Learning Outcomes: A proposed Point of Departure*. Council for Higher Education Accreditation, Washington DC.
- Grabe, W. & Stoller, F. L. (2002). *Teaching and Researching Reading*. Boston, MA: Pearson Education, Inc.
- Haryati, S. (2014). An evaluative review of school accreditation implementation program in Indonesian contexts. *International Education Series*, 7(5), 138-146.
- Jakaitiene, A., Želvys, R., Dukynaitė, R., & Vaitekaitis, J. (2020). *School location and student achievement: Results of Lithuanian maturity examinations in mathematics*. In ICERI2020 Proceedings.
- Kirsch, I., de Jong, J., Lafontaine, D., McQueen, J., Mendelovits, J., & Monseur, C. (2002) in Brozo, W. G., Shiel, G., & Topping, K. (2007). Engagement in reading: Lessons learned from three PISA countries. *Journal of Adolescent & Adult Literacy*, 51(4).
- Komiyama, R. (2009). CAR: A means for motivating students to read. *English Teaching Forum*, 47(3), 32-38.
- Kurniawan, M. I. (2018). *The correlation between school accreditation and students' English achievement of public vocational schools* (Undergraduate thesis). Sriwijaya University, Fakultas Keguruan dan Ilmu Pendidikan, Palembang, Indonesia.
- Lauder, A. (2008). The status and function of English in Indonesia: A review of key factors. *Makara, Sosial Humaniora*, 12(1), 9-20.
- Logan, S., & Medford, E. (2011). Gender differences in the strength of association between motivation, competency beliefs and reading skill. *Educational Research*, 53(1), 85-94.
- Ministry of National Education. (2011). *Indonesia reading proficiency and influencing factors*. Retrieved from [www.oecd.org](http://www.oecd.org).
- Mirizon, S., Diem, C. D., & Vianty, M. (2018). Students' specific comprehension skills in English based on locations, grades, and gender. *Indonesian Journal of Applied Linguistics*, 7(3), 542-552.
- Nnenna, G. E., & Adukwu, B. C. (2018). Influence of gender and school location on senior secondary school student's achievement in Biology Inagbani Education Zone of Enugu State, Nigeria. *Journal of Education and Practice*, 9(21), 45-51.
- Organisation for Economic Cooperation and Development. (2009). *PISA 2009 assessment framework-Key competencies in reading, mathematics and science*. Retrieved from <https://www.oecd.org/pisa/pisaproducts/44455820.pdf>
- Organisation for Economic Cooperation and Development. (2010). *PISA 2009 results: What students know and can do—Student performance in reading, mathematics and science (Volume I)*. Retrieved from [http://www.oecd.org/pisa/pisa\\_products/48852548.pdf](http://www.oecd.org/pisa/pisa_products/48852548.pdf)
- Organisation for Economic Cooperation and Development. (2013a). *PISA 2012 results: What students know and can do—Student performance in mathematics, reading*

- and science (Volume I). Retrieved from <http://www.oecd.org/pisa/keyfindings/pisa-2012-re-sults-volume-I.pdf>
- Organisation for Economic Cooperation and Development. (2013b). *OECD skills outlook 2013: First results from the survey of adult skills*. Retrieved from <http://dx.doi.org/10.1787/9789264204256-en>
- Organisation for Economic Cooperation and Development. (2015). *PISA in focus*. Retrieved from <https://www.oecd.org/pisa/pisa-products/pisainfocus/pisa-in-focus-n55-%28eng%29-final.pdf>
- Organisation for Economic Cooperation and Development. (2016). *PISA 2008: Reading Literacy Framework*. Retrieved from <http://www.anep.edu.uy/anep/index.php/codicen-publicaciones/category/143-pisa2018?download=2162:marco-conceptual-lectura-pisa2018>.
- Ojose, B. (2011). Mathematics literacy: Are we able to put the mathematics we learn into everyday use? *Journal of Mathematics Education*, 4(1), 89-100.
- Osokaya, M. M., & Akuche, U. E. (2012). Effects of school location on students' learning outcomes in practical physics. *IFE Psychologia: An International Journal*, 20(1), 241-251.
- Othman, M., & Muijs, D. (2013) Educational quality differences in a middle-income country: The urban-rural gap in Malaysian primary schools. *School Effectiveness and School Improvement*, 24(1), 1-18.
- Owoeye, J. S., & Yara, P. O. (2011). School location and academic achievement of secondary school in Ekiti State, Nigeria. *Asian Social Science*, 7(5), 170-175.
- Roe, A. (2014). *Lesedidaktikk-etter den første leseopplæringen* [Reading didactics-after the first reading training]. Oslo, Norway: Universitetsforlaget.
- Rothman, S. (2002). Achievement in literacy and numeracy by Australian 14 year-olds, 1975-1980. Research Report. Melbourne, Australia: Australian Council for Educational Research.
- Siahaan, N. S. U. (2018). *The correlation between school accreditation and students' English achievement of private senior high schools* (Unpublished Bachelor's thesis). Sriwijaya University, Palembang, Indonesia.
- Smith, M. C., Mikulecky, L., Kibby, M. W., Dreher, M. J., & Dole, J. A. (2000). What will be the demands of literacy in the workplace in the next millennium? *Reading Research Quarterly*, 35(3), 378-383.
- Thomson, S., Hillman, K., & De Bortoli, L. (2013). *A teacher's guide to PISA reading literacy*. Victoria, Australia: ACER Press.
- U.S Department of Education. (2010). *Highlights from PISA 2009: Performance of U.S. 15-year-old students in reading, mathematics, and science literacy in an international context*. Retrieved from <https://nces.ed.gov/pubs2011/2011004.pdf>
- Voyer, D., & Voyer, S. D. (2014). Gender differences in scholastic achievement: A meta-analysis. *Psychological Bulletin*, 140(4), 1174–1204.
- Warwick, B. E. (1992). How in the World do students read? *I.E.A. Study of Reading Literacy*. Hamburg.

- Xu, J. (2009). School location, student achievement, and homework management reported by middle school students. *The School Community Journal*, 19(2), 27-43.
- Yustika, R. I., Diem, C. D. & Petrus, I. (2019). School accreditation, teachers' competence, and students' English performance in South Sumatera. *Lingua: Jurnal Bahasa dan Sastra*, 19(2), 137-151.
- Yusuf, S. (2008, November 2). *Program in international student assessment: Analisis tes PISA, literasi membaca, matematika, dan sains* [Blog post]. Retrieved from <http://forumliterasi.blogspot.co.id/2008/11/analisis-tes-pisa-literasi-membaca.html>