INDONESIA READING LITERACY PROGRESS:
AN INSIGHT FROM PISA STUDY

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ABSTRACT

Indonesia has actively participated in Programme for International Student Assessment (PISA) since 2000. The study provides insights on educational achievement and progress throughout the world. Although Indonesia’s PISA score is consistent being under the OECD average, the trend has positive progress for Reading subject. Therefore, this paper aims to report Indonesia reading literacy progress based on PISA data from 2000 to 2015 and examine background factors that significantly contribute to Indonesia’s reading achievement. Reading score as main subject in this paper is assumed to have positive relation with background variables such as student motivation and social-economic status. Theories in relation with these factors will be challenged to examine its appropriateness for Indonesia case. Furthermore, these factors will be more elaborated in this paper using descriptive and correlation analysis. Related policies to reading skills will also be analyzed to gain insights about its contribution to reading achievement for Indonesia. Recommendations will be offered in this paper to support evidence-based educational policies for main stakeholders.

KEYWORDS

PISA, Reading Score, Reading Policy.

1. INTRODUCTION

As the world becomes borderless, people are being more competitive as a part of becoming global citizens. Young generation should master 21st century skills: critical thinking, collaboration, communication and creativity in order to equip them in real life (Rotherham and Willingham, 2010). PISA is an international study conducted every 3 years that provides the analysis for assessing 15-years old students’ literacy in reading, math and science, closely related to those skills. These three competencies are regarded as the important basic knowledge that will assist them in later life.

Indonesia has participated in PISA since 2000. The aim is to provide national figure and international comparison to develop better educational policy. Since first round in 2000, Indonesia’s ranking is far below international average. Differ from math and science literacy that require more technical knowledge, Indonesian students perform better in reading literacy as the score is quite improving through the study. Following is the figure of Indonesia score in last PISA rounds.
Figure 1. Indonesia PISA Reading Score

From the figure, there is an improvement in reading score from 2000 to 2009 although there is a slight decline in PISA 2012. The last round of PISA is in 2015 however the international report of this cycle has not been released yet.

The main concern about PISA results is low performance of Indonesian students. Compare to OECD countries, it may not be a good comparison as they have more stable and settled educational system. But, compared to neighbor countries in South-East Asia, Indonesia is ranked last as well. Indonesia merely performs better compared to Central Asian and some Latin American countries.

This paper will provide some descriptive and further analysis about Indonesia reading achievement in PISA study and attempt to find out some contributive factors that determine reading score. Factors such as reading attitude, home and school environment are considered as main variables in the analysis. The data is collected from internationally published data from PISA study for 2009 and 2012 rounds while data for 2015 is internally collected because it has not been released yet.

1.1. Method

This paper adopts data from PISA 2009 to 2015 study. Linking items from PISA test are analyzed in order to perform trend analysis throughout this time period. In order to get better insight of reading achievement, data from PISA 2009 questionnaire is further analyzed. It provides figures related to factors that have relations with reading score. Descriptive statistics and correlation analysis will be performed in this analysis. For future recommendation, regression analysis will also be performed to find out variables’ contribution to reading score.

1.2. Objectives

This paper aims to provide general figures of Indonesia reading achievement progress based on PISA data from 2009 to 2015. Data for 2009 and 2012 are gained from PISA official websites while data for 2015 is from internal database. Further, this paper intends to develop better understanding about factors related to reading achievement through analyzing PISA 2009 questionnaire. The last round of reading as main assessment subject and questionnaire focus is in 2009, it is preferable to use PISA 2009 questionnaire for the analysis.

2. RESULTS AND DISCUSSION

2.1. Results
2.1.1 Reading Achievement Progress

PISA develops both test and questionnaire instrument. For test instrument, there are some linking items that will be a baseline for item analysis. This paper will adopt linking items to provide item trend analysis. Following table is the general figures of reading test based on linking items.

![Figure 2 PISA Reading Items - Percent Correct](image)

From the analysis, all linking items are correctly responded by less than 40% of students, which means that almost all items are difficult for Indonesian students. Based on the item difficulty theory, the cut off for difficult item is 30% (Allen, 2002). The figure shows that only few items consider as moderate level for Indonesian students. However, PISA in its report (2009) indicates that less than 5% of students can do the highest level of items. Therefore, if the cut off is lowered to 5%, there are only some items that are marked as difficult questions for Indonesian students. Some of them will be briefly explained in this paper. The next table shows difficult items for Indonesian students.

| % correct | Unit             | Content Domain | Cognitive Domain             |
|-----------|------------------|----------------|------------------------------|
| R220Q01   | South Pole       | Mixed          | Access and retrieve          |
| PR404Q07  | Sleep            | Non-continuous | Integrate and interpret      |
| PR432Q06  | About a book     | Continuous     | Integrate and interpret      |
| PR455Q05  | Chocolate and Health | Non-continuous | Integrate and interpret      |
| PR466Q03  | Work Right       | Mixed          | Integrate and interpret      |

![Figure 3 PISA Difficult Items](image)
Following is the examples of items that are hard to answer for Indonesian students.

1. **R220Q01**

![Figure 4 PISA Reading Example Question – Map](image)

Due to the prohibition of using PISA linking items, this figure shows equal published item to the specific items

The item provides a map to be completed. Here, it can be seen that students are weak in reading and completing the map. Completing a map is included as one of higher order thinking items that assessing interpretation and integration competency level (PISA, 2009). Students should have more understanding in using information from the text and applying it into a map.

The challenge is to provide students with more practice and exposure to higher order thinking questions. Equipping students with questions that have more relation to real life is also suggested. Further, test stimulus in the form of a map should be also performed in the classroom assessment to encourage and accustom students with this type of item.

2. **PR466Q03**

![Figure 5 PISA Reading Example Question - Conditions Information](image)

Due to the prohibition of using PISA linking items, this figure shows equal published item to the specific items

The item provides information about a supermarket notice for peanut allergy alert. The text states the details of the alert, indicating that some biscuits may contain peanuts and should not be eaten. Students are asked to answer questions based on the information provided.
This item shows that Indonesian students have weakness in spotting additional information such as ‘terms and conditions apply sign’. The item assesses whether students have the ability to extract information from daily announcement. It is real-life skill that students should have for their daily activities. Establishing this type of item also provides information for students about how to find any benefits from it. There should be more similar items tested at the school level for young students in order to equip them with real-life issues so it can benefit them in term of life skills.

2.1.2 Factors related to Reading Achievement

Reading achievement has some factors related to how students get the score. Through PISA 2009 questionnaire, some variables have been analyzed to identify how they relate to each other and contribute to the reading score. Following is the summary of these variables and relationships.

1. Gender

By gender, there are equal number of students who participated in the test. Looking at reading scores, girls performed slightly better than boys in reading subject. From the t-test analysis, there is statistically significant difference between this two groups (p-value < 0.01).

![Figure 6 PISA Reading Score by Gender](image)

2. Attend Kindergarten

Another interesting question is whether students complete early childhood education which is in Indonesian context is completing kindergarten. Half of participants (2318 students) did not attending kindergarten while others attended kindergarten for a year or more. It can be seen from the figure that students who attend kindergarten have higher reading score. The more they study at kindergarten, the higher their reading score. There is statistically significant differences between the groups (p-value < 0.01)

![Figure 7 Reading Score by Pre-school Completion](image)
3. Repeat Grade

Less than 1% of students repeating grade in their schooling period. From the figure, it can be implied that students who never repeat grade have reading score far higher than their peers who ever repeat the grade. Students who repeat the grade more than once has the lowest reading score among the group. It is reported that there is significant different among the groups in all levels (p-value < 0.01).

![Figure 8 Reading Score by Grade Repetition](image)

4. Books at Home

Looking at the figure about books available at home, students who have more than 26 books get slightly higher score in reading. This figure is completely different for students who have more than 500 books with reading score quite similar to those who have less than 26 books at home. From the analysis, there is significant differences among the groups (p-value < 0.01).

![Figure 9 Reading Score by Books Availability at Home](image)

5. Reading Enjoyment Time

Another interesting point to observe is students reading enjoyment time. From the figure below, it can be seen that students who reading more in their spare time perform better in reading. It is reported that there is significant different among the groups in all levels (p-value < 0.01).
6. Parental Education

Following is the table of parental education in relation with students’ reading score. It can be seen that educational level of parents is mostly at the primary school and diploma/bachelor degree level. Looking at the reading score, the higher parental education, the higher the reading score of students. Further, the higher the mother’s educational level, the higher the students’ reading score compared to father educational level. From the analysis, there is significant differences among the groups (p-value < 0.01).

7. Parental Occupation

Parental occupation is classified into white and blue collar category. Following figure provides parental occupation in relation to reading score. It can be seen that parent with white collar occupation have kids who perform slightly better than their counterparts. However, looking at whether parents are highly skilled or not, there are some differences where in the white collar group high skilled parents have kids who perform better while in the blue collar group the trend is completely in reverse. From the analysis, there is significant differences among the groups (p-value < 0.01). Performing post-hoc analysis, there is significant different between white collars and blue collar groups (p-value < 0.01) with value of contrast 58.52.
8. Correlation of variables

Performing correlation analysis, the results are in the table below. All correlation coefficients are statistically significant and the correlation between the reading score and SES index is the highest at 0.292. There are two variables: teacher student relationship and age at primary school which negatively correlate with the reading score.

Looking at how strong these correlations effect to reading score, there are no correlations exceed 0.3. It means that the variables have merely weak correlations with reading score.

| Variables                                      | Reading Score |
|------------------------------------------------|---------------|
| Attitudes towards Reading                     |               |
| Joy/Like Reading                               | .163*         |
| Online Reading                                 | .264*         |
| School Environment                             |               |
| Attitude towards School                        | .168*         |
| Teacher Student Relationship                   | -.057*        |
| Age at Primary School                          | -.155*        |
| Parental Variables                             |               |
| Highest Educational Level of Parents           | .250*         |
| Highest Parental Occupation Status             | .268*         |
| Home Environment                               |               |
| Wealth                                         | .248*         |
| Home Educational Resources                     | .195*         |
| Home Possessions                               | .228*         |
| Index of Economic, Social and Cultural Status (SES) | .292*         |

*. Correlation is significant at the 0.01 level (2-tailed).

Figure 13 Correlation Analysis of Reading Score

2.1.3 Reading Attitudes

Questionnaire items asking about reading perceptions which are further analyzed using factor analysis to identify whether there are some common variables grouping in certain factors. Following table shows the results. After splitting data into categories by: gender, educational level of parent and reading score, there are no significant differences with this figure. The items only differs in the term of factor loadings index but has no significant different in the interval range.

Factors are grouped into two categories which are negative and positive reading attitude. Negative reading attitude consist of questions as follows: reading is a waste of time, hard to finish reading, cannot sit still while reading, reading only if I have to, and reading only for need information, while positive reading attitude includes following statements: talks about books, happy to have books as presents, enjoy library, express opinions about reading, reading as favourite hobby, and books exchange.

Next step is to weight participants’ response with factor loadings in order to create new variables and perform correlation analysis against reading score. The analysis shows following results.
From the results, it can be seen that negative reading attitude is statistically significant and negatively correlated with reading score while positive reading attitude is statistically significant and has positive correlation with reading score.

The analysis also shows that the correlation coefficients are close to zero. It means that there is very weak correlations between these variables and reading score. Positive reading attitude however has slightly higher correlation coefficients compared to negative reading attitude.

### 2.1.4 Regression Analysis

In order to identify further contribution of interested variables on reading score, regression analysis is performed. The aim is to build a model that can predict the improvement of reading score. Following table provides meta-data information of variables used for regression analysis.

| Variable                      | Information                                                                 |
|-------------------------------|-----------------------------------------------------------------------------|
| Wealth                        | Measuring family wealth                                                     |
| Index of Economic, Social and Cultural Status | Measuring home possession, parental occupation, parental education, wealth, cultural possession and home educational resources |
| Attitude towards school       | Measuring attitude towards school                                           |
| Teacher Student Relations     | Students perceptions about their teacher                                    |
| Attitude towards computer     | Measuring attitude towards computer                                         |
| Highest parental education    | Parental educational level                                                  |
| Highest parental occupation status | Parental occupational status                                             |
| ICT use                       | Use of ICT for information or entertainment                                 |
| Use of library                | Use of library for study or entertainment                                   |
| Joy/Like Reading              | Likeliness of reading and Attitude towards reading                          |
| Online Reading                | Behaviour related to reading online                                         |

From the data, linear regression equation can be derived to see whether some variables significantly contribute to reading score. Following table shows the results. Although the model can merely explain 15% of the data, all predictors are statistically significant which means that they contribute to the reading score. The model can be summarized as follow:

\[
\text{Reading Score} = 425.78 + 3.45 \text{ Wealth} + 10.77 \text{ SES Index} + 9.04 \text{ Attitude towards school} + 16.22 \text{ Joy/Like Reading} + 7.48 \text{ Online Reading}
\]

All variables are included in the analysis however some variables have no statistically significance to the model. They are highest parental occupation, highest parental education and teacher student relations. Two variables were excluded from the analysis because it cannot be computed, ICT use and attitude towards computer. Lastly, use of libraries variable, as described by PISA scaling procedures (PISA, 2009) is excluded because it is not having sufficiently high variability.
2.2. Discussion

2.2.1 Reading Achievement Progress

From the analysis, Indonesian students still have an issue with the PISA test. Specifically, in the reading subject, students are challenged by higher order thinking items which not only assess their knowledge but their further understanding through a set of case studies.

Firstly, challenges are coming from the familiarity with using PISA questions format in classroom tests. Teachers more commonly set tests that only assess knowledge rather than applying it to the case study. Further, school test is mostly in multiple choice format. Students therefore are unfamiliar with essay questions. It makes it more difficult for them to answer this type of question while they have to deal with questions that assess higher level of thinking. On the other hand, PISA has significant portion of essay questions.

Reading alone has some features that may be uncommon for Indonesian students. In the national exam, it is hard to find complex text with multiple stimulus in a reading test. Students may have an issue with reading the text as well as time to answer the questions. Teachers also have similar problems as they do not have sufficient experience in teaching how to understand this complex text as well as a strategy to answer questions related to the text. The main point is that students’ weakness may merely due to their limited exposure to PISA reading test format rather than their reading ability.

Looking at the Indonesia classroom, there are some issues regarding student competency level that is assessed by a written test. Teachers are more common in developing lower level thinking items which merely assess access and retrieve information competency. In some ways, teachers are not highly encouraged to develop more challenging assessment that not only measures retrieve information competency but also problem solving skills.

Varying the test also contributes to students’ ability in doing the test with different format and stimulus. Indonesia students are weak in reading graphs, maps and any visual stimulus items. It can be traced back to the classroom assessment that merely provides students with simple and monotonous questions with limited stimulus in the form of visual objects.

Looking at the national exam established by the government, teachers may not be encouraged in developing more varied and challenging tests as the example of national test also shows similar issue. They prefer to teach for the test rather than provide more difficult questions that take time and resources to build it up. As a consequence, assessment is only for assessing national curriculum subject rather than life-skill and literacy subjects as PISA is aimed to do. Assessment is merely treated as a tool for measuring memorization of certain concepts and formulas written in the textbooks.

As PISA is developed in English test format, translation may be an issue for non-English speaking countries (Sjøberg, 2015). Although PISA has established set of rules for ensuring the best translation process, meaning reduction can always be an issue in translation process. Indonesia is using their national language, Bahasa Indonesia, for PISA instruments which in some ways makes some words have different meaning to what it should be. As concludeed by Arffman (2010), her study concludes that “equivalence of translation” is almost infeasible. Therefore, addressing this issue, strict translation rules should be established not only by PISA but also by internal authority to ensure that the translated version is as identical to its original version as possible.

Another point to be considered is comparing countries’ performance. PISA participants are mostly OECD countries which already have established and ‘settled’ educational systems. Therefore, providing benchmark results from PISA should be carefully interpreted as it may comparing two different systems. As a developing country, Indonesia can have some insights about how high achiever countries perform in PISA test by looking at their educational system and policy. However, bringing it to Indonesian context, there are some issues to be considered. For example, issues such as educational equity in relation with how access to educational quality takes place as a big problem in Indonesia. It is known that as a big archipelagic country, Indonesia
should set up better directed regulations in order to well-delegate and share the responsibility for education spending and management with local governments.

### 2.2.2 Reading Perceptions: Attitude, Home and School Environment

Looking at the results from the previous section, there are some interesting findings in relation to factors that may contribute to reading score. Firstly, gender is making a difference as it is also captured by the PISA report. The trend occurs in all PISA participating countries that girls perform better than boys in reading. It is also well-accepted by some scholars in their recent studies (Logan and Johnston, 2010; Robinson and Lubienski, 2010). The trend may be different for other subjects such as Math where boys in most cases perform better than girls (Lubienski et al. 2013). In all PISA studies, girls are always performing better than boys in reading. It can be inferred that girls are more likely to read long text and be more careful in tackling the question while boys have more spatial and logical competency that provide better view of doing a Math test (Logan and Johnston, 2010).

Further, looking at early childhood education, it is in some ways having a contribution to reading score. Students who complete their pre-school education perform slightly better than their counterparts who did not complete kindergarten. It is supported by research developed by Ahtola et al. (2011). However, age at entering primary schools have negative relation to reading score meaning that the older the student, the less likely s/he gets higher reading score.

Students’ progress through their schooling period is also quite significant in determining their reading score. Those who repeat the grade tend to have lower score in reading. It is supported by research developed by Manacorda (2012).

Number of books at home is also a significant contribution factor in reading as the more it is available the higher students’ score. However, it is interesting that students who have more than 500 books at home are not achieving the highest score but in the same level of those who have books less than 26. It can be inferred that students might wrongly answer the question because it is uncommon for Indonesians to have personal library which collects hundreds of books at their home (Griebeler, 2015). Students might think that magazines and newspapers are categorized as books at home in this case.

Looking at reading enjoyment time, it is known that students who have more enjoyment time have higher reading score (PISA, 2009). Their reading activity supports their ability to excel at text analysis and enrich their vocabulary that are main factors in performing reading test. This finding is supported by Clark and Zoysa (2011) in the research of PIRLS (Progress of International Reading Literacy Study) and Smith et al. (2012) in the study of New Zealand's National Education Monitoring Project.

Turning to parental factors in relation to reading score, parental education has significant contribution to students’ reading achievement. The higher parental education, both mother and father, the higher the reading score. There is some research support this finding as students who have parents with high educational level have more exposure to educational resources and access such as textbooks, literature, educational software and online reading access (Kloosterman et al. 2011). Further, mother educational status plays an important role in shaping students’ ability in reading and other school subjects as pointed out by Peters and Mullis (1997) study in Lacour and Tissington (2011). The main finding of their study is that mother’s education level had a 20% higher effect than father’s education level on students’ academic achievement.

Looking at parental occupation status, students with higher occupational status parent are more likely to get a better score in reading. Parental occupation is categorized into white and blue collar group. It shows that white collar parents have students with higher reading score compared to their counterparts. It also captures that high skill parents in white collar category have students who perform slightly better in reading. However, the trend is in reverse for blue collar category where low skill parents have students with higher score in reading. It may be that in lower economy status family, best students are more fighting for their education rather than their peers from middle
income family. The significance of parental occupation to students’ performance is also previously studied by Farooq et al. (2011).

Another interesting point is about economic and social factors in relation with reading achievement. From correlation analysis, it can be seen that SES index has the highest correlation to reading score. Further, wealth and home possession positively correlate with achievement in the reading subject. Joy/like reading also contributes to higher reading score as well as online reading while attitude towards school has positive correlation with reading score. However, teacher-student relations negatively correlates with reading score means that this factor is not improving students’ ability in reading. Parental education and occupation also have significant contribution to the reading score. Although there are only weak correlation coefficients and these variables have partial explanation, it still has some contributions to the reading score.

There is significant body of research in relation with social economic factors and academic achievement. For example, study of Latino Students by Eamon (2005) and study of Albania students by Kashasu (2014). Their findings emphasis that students come from socially and economically advantaged family perform better than those who comes from a disadvantaged family. It is closely related to the issue of educational access and resources available to support their learning process.

Proceeding further to attitudes towards reading, factor analysis is performed in order to find out some categories in relation to the reading score. The result shows that there are two different groups: positive attitudes and negative attitudes towards reading. Positive attitudes include: talk about books, enjoy library, expressing opinions about books, reading as favourite hobbies, and books exchange while negative attitudes are reading is a waste of time, hard to finish books, cannot sit still while reading, happy to get books as present, reading only if I have to, and reading if I need information. The figure is quite similar if the cases are grouped by gender, parental educational level (under and above tertiary education), and reading score (low and high score).

From this findings, whether girls and boys perceive the similar issue about reading. It is the same case for students who have parents with lower or higher educational level status. Lastly, it figures out similar trend for students who get lower or higher reading score. In general, students who perceive positive attitudes towards reading slightly perform better as joy/like reading has significant positive correlation to reading score. It means that if they like reading and have positive attitudes towards reading, they are more likely to get better score in reading. Study by Wigfield et al. (2012) supports this finding as it is in line with motivational theory in order to improve learning outcome.

Lastly, performing regression analysis in order to find out how factors contribute to reading score shows interesting findings although the model merely explains 15% of reading score. The model is summarized as follow:

\[
\text{Reading Score} = 425.78 + 16.22 \text{Joy/Like Reading} + 10.77 \text{SES Index} \\
+ 9.04 \text{Attitude towards school} + 7.48 \text{Online Reading} + 3.45 \text{Wealth}
\]

From the model, it can be seen that joy/like reading has the highest positive contribution to the reading score, followed by SES index and Attitude towards school. Online reading also gives positive contribution to reading score while wealth is the least contribution factor in the model. All variables in the model has already been weighted and in the index format by PISA authority. Therefore, the variables consist of some questions taken from questionnaire not as single items.

Linking this model to reading performance, past research shows that students who come from disadvantaged families are less likely to achieve higher performance at school (Lacour and Tissington, 2011). It links to educational access that is provided by their parents and surroundings. Here, SES index and wealth become main factors in determining reading score. It is also a challenge for Indonesia to tackle the issue of educational equity across the nation.

Further, reading as a hobby should be encouraged for young people as it is closely related to their performance in reading literacy. The real issue here is providing sufficient and appropriate reading support materials for kids and youth. Indonesia still has an issue with number of books...
available for reading. Compared to other nations, it is merely having least number of books available per people (Griebeler, 2015). Indonesian students also have limited access to educational e-books and websites especially for students outside Java (the populous island and government and business central in Indonesia). Therefore, partnering with local governments and communities is expected to improve these facilities in the remote areas.

Looking at school environment, there are still significant number of school that have no library. Even if a school has its own library, the books are not updated or not in sufficient number for students to take home as light readings. In the community, there is only small number of districts that have town libraries. They are usually in big cities where local government invests in developing library as a learning center. However, its visitors are not massive as students come only for doing homework or having group work. In general, reading has not yet become a part of habit or even a hobby in Indonesia (Griebeler, 2015).

Another interesting point about reading score is how students perceive their school that has significant impact on their reading score as also pointed out by study of Germany students conducted by Legewie and DiPrete (2012). It means that students who have a sense of comfort and belonging to their school are likely to get a higher reading score. However, teacher student relations have no significant contribution to reading score in the model. Further research should be conducted to examine this issue. The assumption is teachers may impact on how students learning their subjects while schools in general have contribution to students’ wellbeing that will lead to their performance in the class. Online reading should be a further concern as it contributes to reading score as it is also emphasized by Gil-Flores et al. (2012) study.

2.2.3 PISA Reading Score and National Examination Result

Another way to identify whether PISA score shows link to national context is to compare it to national exam (NE) report. Following graph shows national exam reading score of PISA school samples in 2009. In general, it shows that PISA school samples are in the average of national reading score. Some provinces perform slightly better than national level while there are some of them that are not performing well.

![Figure 16 PISA Samples National Exam Reading Score](image)

From the graph, it can be seen that PISA school samples in Kalteng, Kalsel and Kepri have NE reading score below the average of its NE reading score. On the other hand, Lampung has outperformed all the others.

The graph shows that PISA school samples are well-represented Indonesia’s students in terms of academic achievement. The issue is that participated schools have merely average reading score. On the other hand, Indonesia has significant number of bright students who won international Olympiad competitions. But, they are special cases who are naturally brilliant and get further academic treatment as part of their preparation program.
Therefore, the graph indicates that Indonesia still faces disparity problems where some students are gifted while others are still struggling for their access to qualified education. It comes down to the issue of empowering gifted students by not only providing scholarship funding for them but also special learning program for them at school level. However, educational access should be the first priority as it is the main problem in this case.

2.2.4 PISA Reading Score: Indonesia and Other Participating Countries

Looking at Indonesia’s performance compared to other countries in reading subject, there is evidences of work to be done. From PISA 2009 report, it can be seen that Indonesia scored 402 in reading and ranked in the 8th from the bottom line. It has reading score far below OECD average (499).

PISA established proficiency level into 6 levels where the higher the level, the higher students’ competency level. Splitting into reading proficiency levels, Indonesia has less than half of its students who achieved level 2 or above. The trend is more striking in students who achieved level 5 and 6 where it is less than 1% of total students. Generally, most students are in the level 1a.

![Figure 17 PISA 2009 Reading Results](chart)

From the graph, it can be seen that Indonesian students perform far below the OECD average. They have merely better scores compared with only some developing countries. Looking further to reading proficiency levels, Indonesia is in the average of level 1a – 2. Further, it has not only some high achievers but also a number of low achievers who perform below level 1b. However, compared to other countries which have similar performance level, students who perform below 1b are the least among them.

Furthermore, an unequal portion of students’ reading proficiency levels shows that there is a wider gap between low and high achievers students. This figure is different in the high performing countries which has quite balance portion of students reading proficiency levels.

It can be inferred that Indonesia’s performance is in the lower level compared to other participating countries. From the figure, Indonesia should be more concerned with handling students’ variety in reading proficiency levels. It comes to the point that students are not only under-performing but also in the wider gap of low and high achievers. From the latest PISA report
in 2012, Indonesia has ranked in the 6th from the bottom line. Following figure shows Indonesia reading score compare to other participating countries.

| Mean score | Comparison country/economy | Countries/economies whose mean score is NOT statistically significantly different from that comparison country/economy’s score |
|------------|----------------------------|---------------------------------------------------------------------------------------------------------------|
| 570        | Shanghai, China            | Singapore, Japan, Korea                                                                                       |
| 545        | Hong Kong-China            | Hong Kong-China, Japan, Korea                                                                                 |
| 542        | Singapore                  | Hong Kong-China, Japan, Korea                                                                                 |
| 538        | Japan                      | Hong Kong-China, Singapore, Korea                                                                            |
| 534        | Korea                      | Hong Kong-China, Singapore, Japan                                                                             |
| 524        | Finland                    | Finland, Chinese Taipei, Canada, Poland, Liechtenstein                                                          |
| 523        | Ireland                    | Finland, Iceland, Canada, Poland, Liechtenstein                                                                 |
| 521        | Chinese Taipei             | Finland, Iceland, Canada, Poland, Liechtenstein                                                                 |
| 520        | Canada                     | Finland, Ireland, Chinese Taipei, Poland, Liechtenstein                                                          |
| 518        | Poland                     | Finland, Ireland, Chinese Taipei, Canada, Estonia, Liechtenstein, New Zealand, Australia, Netherlands, Viet Nam |

From the figure, Indonesia reading score is not statistically different from Tunisia, Colombia, Jordan, Malaysia, Argentina, Albania and Kazakhstan. Compare to previous round of PISA in 2009, Indonesia has slightly insignificant declined in reading score from 402 to 396. In general, OECD average slightly decreased from 499 in 2009 to 496 in 2012. Compared to south-east Asian countries, Indonesia’s performance is the lowest among them with Malaysia performing slightly better. Thailand reading score is close to OECD average while Vietnam has better performance slightly above OECD average. As expected, Singapore is always in the top 5 in PISA study.

Indonesia should pay more attention to improve its performance against other countries. Looking at how high performing countries rank in the PISA study will provide better insights for national context. Their best educational policies and practices also offer better option for Indonesia to be nationally adapted in order to improve its educational achievement. The issue to be considered here is how to apply it into national context. Each country has different socio-cultural backgrounds which some policies or practices may not appropriate for Indonesian context.

3. CONCLUSION AND RECOMMENDATION

In the latest PISA study in 2012, Indonesia is still one of the low performers and grouped with similar countries as in previous PISA round in 2009. Here, the issue is how to improve Indonesia reading score in the next round of PISA.

Firstly, PISA style tasks should be introduced at the school level so students and teachers have more exposure to PISA items. It is expected that students and teachers become accustomed to PISA testing style while classroom assessment is encouraged to adopt PISA test format. Encouraging teachers and school level management to provide complex text in the school test is also suggested. It can also be supported by establishing homework in the format of reading and analyzing books and literature.

Further, students’ wellbeing should be a concern for educational practitioner and the government. Providing better access to reading materials both at school and home is essential to encourage children to read. School library is also an important place for students to get access to textbooks and other popular books. Further, internet access equipped with safety and security...
protection should be also provided in the school level to enhance students’ access an engagement with online reading. Further, government should also partner with local government in improving town libraries numbers.

Early childhood education is important for developing students’ exposure to reading materials since early ages. In addition, students’ age at starting primary school have negative correlation with reading score therefore age limitation is not an issue in this case. Current policy about age limitation while entering primary school should be re-examined to provide better insight about students’ early schooling years in relation to their physical age.

Gifted students should also be a concern as their learning progress should be tracked down in order to prepare them for brighter future. Providing special class for them and scholarship funding would support their learning progress. Meanwhile, government can have their records to prepare them for being future leader in their specialties.

Looking at how parental education relates to reading score, girls’ education should be a main focus as mother educational level has significant correlation to readings core compare to father educational level. Providing girls more access to education is suggested moreover in the rural areas. Strengthening partnership between parents and school should be also encouraged.

Lastly, to provide better insights into how to improve reading scores, best educational policies and practice from high achievers countries should be further examined and adapted into the Indonesian context. Improving teacher and school partnership in sharing best teaching methods and assessment instruments among school educators within district and strengthening partnership with local government are some of the best examples.

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