

Indonesia PISA Result and Impact on The Reading Learning Program in Indonesia

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Abstract—This study aims (1) to describe the PISA program, the function of the PISA program, the objectives of the PISA program, the PISA program objectives, (2) explain the PISA results obtained by Indonesia, especially reading competence over the period 2000 to 2015, (3) describe the impact of the PISA on Indonesia such researches related to PISA and the government programs about school literacy regulations related to Permendikbud Nomor 23 Tahun 2015 about *Penumbuhan Budi Pekerti*. Data collection by literature observation. Data analysis with qualitative descriptive method. Research results as. First, the competencies tested in PISA are Mathematics, reading, and science for 15-years students, the program done by the OECD every 3 years, started from 2000's until 2015. Second, the average score results of student reading competency in Indonesia during 2000 until 2015 generally has decrease and make Indonesia ranked on 60th out of 72 countries. Third, the impact of PISA on the development of reading learning in Indonesia is the large number of researches about the reading learning development in Indonesia i.e. PERMENDIKBUD Nomor 23 Tahun 2015 about *Penumbuhan Budi Pekerti* which obligate students to read some books for 15 minutes before the class begins.

Keywords—Pisa results, Pisa research, reading learning program, Indonesian junior high school students

I. INTRODUCTION

"Decade of Literacy" was coined as the 2015 UN Global Community Development Main Agenda. This program implies that in that year all citizens of the world must be free from ill literation [1]. This is also stated in the Education for All (EFA) program or under Education for All (PUS) under the coordination of the United Nations for 164 countries in the world participating in program membership.

The term "literacy" has broad meaning over time. Literacy now is not only interpreted as the ability to write and read but "... has instead come to be considered synonymous with its hoped-for consequences" [2]. Now literacy has the meaning and implications of basic reading and writing skills to acquire and manipulate knowledge through written texts, from metalinguistic analysis of grammatical units to oral and written text structures, from the impact of human history to the philosophical and social consequences of western education.

Several literacy surveys followed by Indonesia include PIRLS and PISA. The discussion about the reading competency test, now seems unable to ignore the reading assessment model known as PISA and PIRLS. Both types of measurement of learning achievement are international. The

PISA exam involves three kinds of literacy competencies, namely reading, mathematics, and science. Of all the language competencies, it turns out that only the reading competence chosen to be tested. It shows how important that competence is for educational success. On the other hand, PIRLS is even specifically intended to measure children's reading literacy competencies.

Indonesia took part in both literacy measurements. PISA is a literacy measurement for children aged 15 years, while PIRLS is for 4th grade elementary school pupils. Indonesian junior high school's pupils who are selected to take the PISA and PIRLS exams are still in the lower ranks compared to other countries. PISA and PIRLS are quite influential in the world and their reliability is recognized as a measure of competency and skill, so the valuation models must be known, studied, tried and then applied in Indonesian schools. That is, even reading learning activities must be strategized to be able to answer the test models. Various benefits of these activities are used as input for curriculum development (K-13). One of the objectives of implementing PISA and PIRLS is to provide input for policy making in the field of education in each participating country [3].

Furthermore, in this paper will be focused and discussed more in depth about the nature of PISA, the PISA results obtained by Indonesia in the past few years until 2015. Comparing Indonesia's PISA results, especially reading from year to year. The impact caused by the existence of PISA for the world of Indonesian education.

The rest of this paper is organized as follow: Section II describes the proposed research method. Section III describes the research result and following by discussion. Finally, Section IV concludes this conclusion.

II. RESEARCH METHOD

The method used in the research in this paper is qualitative descriptive. The type of research in this paper is library research. Library research, literature search is more than just serving the functions mentioned to obtain research data. Strictly, library research limits its activities only to library collection materials without the need for field research [4]. Various types of print media (books, magazines, newspapers etc.) documents, or non-print can be stored in the library. Then it is collected using a catalog, or another collection form. The collection has been classified according to scientific groups in various disciplines.

Data sources in library research or library research in this paper are e-journal articles that contain information about Indonesian PISA results in the period 2000 to 2015. Other sources of data that are also used in this study are e-books written by OECD that contain PISA results from 2000 to 2015. In addition, other books and other e-journal articles related to PISA were used and research and development based on the follow-up of the PISA results. The data that has been found from e-journal articles, e-books and other sources is then grouped and analyzed to determine the results of the Indonesian PISA obtained over the period 2000 to 2015. Choosing the data that contains research and development are done as a follow-up continued from the Indonesian PISA results.

III. RESULT AND DISCUSSION

This section presents the research results obtained and following by discussion.

A. PISA

PISA (Program for International Student Assessment) is an international study of the achievements of reading, mathematics, and science literacy for 15-year-old pupils. This program done by the OECD (Organization for Economic Cooperation and Development) in Paris, France. PISA is held every three years, i.e. 2000, 2003, 2006, 2009, 2012, 2015 and so on until it is estimated ended in 2030. Indonesia began to participate in the program since 2000 [5].

PISA aims to measure mathematics, reading, and science achievements in 15-year-olds pupil in countries that take part in this program. For Indonesia the benefits gained from the program, among others, are to find out Indonesia's position compared to other participating countries. The PISA program can be used to develop learning models in Indonesia so that they are compatible with other countries in the world, especially those who are PISA members.

The results of this three-year research also reveal the variation in the acquisition of scientific literacy achievements based on three aspects. First, aspects of school roles have been shown to influence student achievement in science scores, noted students who received high grades for scientific literacy because of the role of the principal, namely fulfilling their responsibility for good school governance, students recorded higher grades in terms of science. If the proportion of principals who monitor student performance and report it openly is higher, then their PISA achievement figures are proven to be higher. On the other hand, the proportion of principals who complain of lack of subject matter is higher than other countries, which is 33% in Indonesia, 17% in Thailand and 6% in other OECD countries.

Second, aspects of science achievement between students from private schools and public schools show a significant difference in achievement. About 4 out of 10 students in Indonesia attend private schools, this number is significantly higher than the average OECD countries and neighboring countries such as Thailand and Vietnam. Indonesian students in public schools scored 16 points higher in the

scientific competence, compared to their peers in private schools, considering their socioeconomic status background.

Third, the aspects of socio-economic background, from the 2015 PISA results, showed that 1 in 4 PISA sample of Indonesian respondents had parents with education who only graduated from elementary school or did not complete elementary school. This number is the second largest of all participating countries. But when compared with students in other countries who have parents with the same educational background, the achievement of science in Indonesian students is still better than 22 other countries. The recorded Indonesian science score in PISA 2015 is 403, if the socio-economic background of participating countries is equated, the achievement of Indonesia's science score is at 445 and Indonesia's position rises by 11 ranks. The most important thing about international benchmarking surveys such as PISA is how we conduct follow-up based on diagnoses generated from the survey. Increased achievements must continue to be improved by improving the quality of education in Indonesia. If the rate of increase in 2012-2015 can be maintained, then by 2030 our achievements will be the same as the average achievements of OECD countries. Need to be optimistic to continue working hard.

Especially for reading competence, the subscale used is the ability of students to obtain information (retrieving information), interpret text (interpreting text), and reflect the text (reflecting text). The emphasis on various types of texts consequently in the hypermedia era was positively responded by some linguists such as Phillips and Jorgenson because PISA provides an opportunity for the creation of interdiscursivity which is the theme of discussion about language and power of language [3].

Referring to the subscale above, reading literacy assessment is developed based on three main things, namely situation, text, and aspects. The situation is used to determine the texts and related tasks that refer to the context and their use built by the text writer. Situation or context refers to various variable contexts, namely personal, community, education, and work contexts. The personal category situation is related to texts intended to fulfill personal interests both practically and intellectually. The general category situation relates to the reading of texts relating to community activities and concerns. The situation of the education category is related to the contents of the educational text, which is usually intentionally designed specifically for learning purposes, while the occupational category is related to texts that display the world of work.

The second thing concerns the problem of text (content), which is a variety of reading material tested, both printed and digital text. The text format is a sustainable and unsustainable text that can both appear in print and digital media. (Chapters in books, fiction, reports, news, etc.) On the other hand, the text is not sustainable, for example in the form of lists, graph tables, diagrams, advertisements, schedules, catalogs, indexes, etc. In other classifications, sustainable text is often also divided into text descriptions, narratives, expositions, arguments, instructions, and transactions.

The third thing concerns aspects (processes) that refer to cognitive strategies that determine how readers engage or

"handle" the text. Broadly speaking, five processes can be shown for reading assessment tasks, namely taking information, forming broad understanding, developing interpretations, reflecting and evaluating text content, and reflecting and evaluating text form. Thus, measurement of reading literacy competencies includes competency in taking and understanding information, identifying and using, reflecting and evaluating the texts being tested, and relating them to their own experiences. All of them require high-level thinking competence [3].

B. Indonesian PISA results

The results of the PISA survey in a survey that was once followed by Indonesia also showed alarming results. In the 2000 survey, Indonesia ranked 39 of the 41 countries surveyed. In 2003, Indonesia occupied the 39th position of 40 participating countries. Meanwhile, for the 2006 survey, Indonesia ranked 48th out of 56 participating countries [5]. The ranking of Indonesian children in PISA in 2009 was read: ranked 61 of the 65 countries that followed. In PISA 2012 for reading, math and science literacy Indonesia ranked 64th out of the 65 countries that followed. The average Indonesian children's math score is 375, reading 396, and science 382. In fact, the average PISA score in sequence is 494,496, and 501 [3]. Pakpahan revealed the results of PISA data obtained by Indonesia during the 2000 to 2012 period in the Figure 1 below [6].

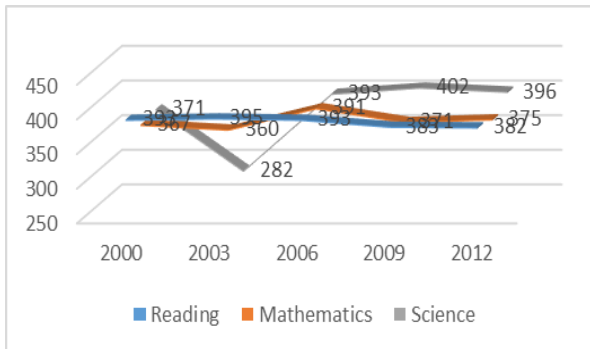


Fig 1. PISA 2000-2012 Average Achievement Results

In the Figure 1 above, the development of reading ability decreased in 2003 and then increased in 2006 and then developed in a monotonous or horizontal manner. Mathematical ability tends to go up and down insignificantly. Science competence develops evenly or stagnantly. The increase in student literacy is less encouraging or there is no improvement and the value is still far from the highest value above 600, as shown in the table above.

The results of the PISA survey in 2015 showed a significant increase in educational attainment in Indonesia, amounting to 22.1 points. These results put Indonesia in the fourth position (60) in terms of student achievement increase compared to the results of the previous survey in 2012, from 72 countries that took the PISA test [8]. Data shows PISA results in 2009, 2012, and 2015. On the average reading achievement there was a decline in 2012, namely in 2009, the average achievement of 402 decreased 396 and in 2015 only increased by one point by 397. The increase raised

Indonesia's position 6 to the top when compared to the second from bottom in 2012. Judging from the median achievement of reading competence in 2009 to 2015, the median achievement in 2009 was 295, in 2012 it was 337, and in 2015 it was 350. These data can be seen in Figure 2 below.

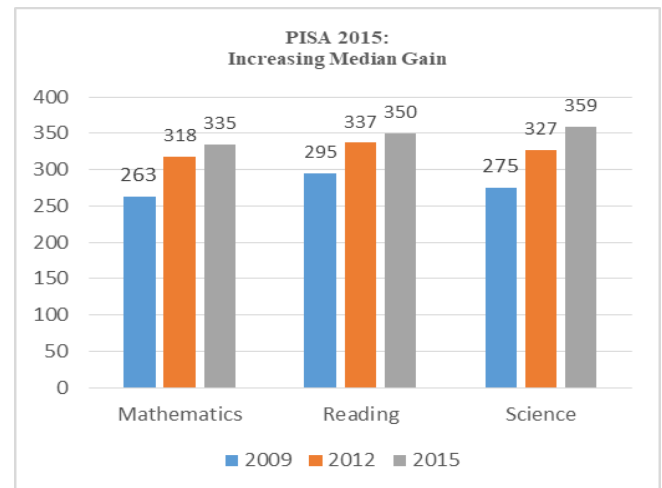
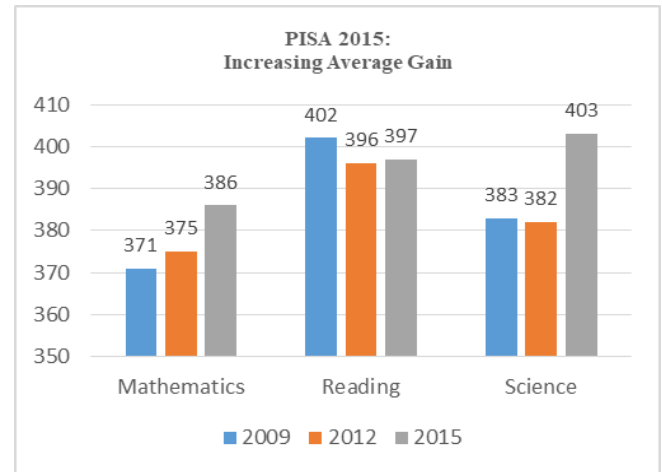


Fig. 2. PISA Average Results of 2009-2015 (<http://puspendik.kemdikbud.go.id/inap-sd>)

From the results of the Indonesian PISA acquisition data in the period 2000 to 2015, the average achievement in the three competency fields tested in PISA, namely mathematics, reading and science, is as follows (see Table I).

TABLE I: AVERAGE GAIN OF PISA 2000-2015

No	Year	Mathematic	Reading	Science
1	2000	367	371	393
2	2003	360	282	395
3	2006	391	393	393
4	2009	371	402	383
5	2012	375	396	382
6	2015	386	397	403

The data above shows that the achievement of average reading competence experienced stagnation in 2012 and

2015. The highest achievement of reading competence achieved by Indonesia in 2009 was 402 points. When compared with two other competencies starting in 2009 to 2015 reading competence has decreased (402, 396 and 397) while, two other competencies in mathematics and science have experienced a significant increase. Mathematics (371, 375, and 385), science (383,382,403). Indonesia's acquisition as shown in the table above is still far compared to the achievement of other countries' average achievements, this has resulted in Indonesia having to settle for being ranked 60th out of 72 PISA participating countries in the 2015 PISA results published by the OECD.

C. Impact of PISA Results on the Development of Reading Learning in Indonesia

From the results of the acquisition of the mean score above, starting from 2000 to 2015 shows that the reading competence of Indonesian students at the age of 15 is still low. During the period of 2000 to 2015, the average achievement of Indonesian students' reading competence was obtained (371, 282, 393, 402, 396, 397). Many factors have resulted in low scores for the average Indonesian students' reading competence. Some of the factors that might be the cause is that Indonesian students are not familiar with reading in the PISA program. HOTS (Higher Order Thinking Skills) which is emphasized in PISA certainly makes the types of reading presented different from those that have been studied in school. The type of reading questions submitted in PISA requires students to be able to think high-level, of course also different from the level of questions obtained by students in school so far. For this reason, it is necessary to conduct research and development of learning models that are aligned with PISA. Several studies related to PISA have indeed been carried out by UNSI PBSI lecturers. Some of the features are research entitled: (1) Main Design of School Literacy Movement by Wiedarti *et al.* in [7]; (2) Construct Literacy Competence for Elementary School Students by Tadkiroatun Musfiroh and Beniati Listyorini in 2016; and (3) Analysis of Learning Outcomes of Students in Reading Literacy through Study International (PIRLS) 2011 in 2014. None of the three research results have researched and developed reading and problem models that are in accordance with the reading competency criteria tested in PISA, for that research needs to be done.

The next thing that can be concluded as a factor of the low achievement of the average score of Indonesian students' reading competence in PISA is that interest in reading in Indonesia is still low. Whether it's to read books of knowledge or non-literature or to read literature. To strive for increased interest in reading Indonesian students the government has done various ways. One of the ways that the government is currently intensively carrying out is making regulations about literacy. Based on *PERMENDIKBUD* Number 23 of 2015 concerning Growth of Characteristics, contains the obligation to use 15 minutes before the learning day to read books other than subject books (every day) [8]. The government wants to develop students' insights through reading books other than textbooks. In addition, to increase

the attractiveness of students to read, then reading literary works is one of the right reading choices.

This is also stated in the syllabus of Indonesian Curriculum 2013 subjects. In language and literature learning, a culture of reading and writing is integrated. In one year, students are motivated to be able to read at least 4 books either literature or non-literature so that after students complete their education at the junior high school level, read at least 12 titles [9].

IV. CONCLUSION

Based on the above explanation it can be concluded as follows. First, the competencies tested in PISA are mathematics, reading and science for 15-year students, the program is carried out by the OECD, conducted every 3 years starting in 2000 until now 2015. In the PISA for reading competence, the subscale used is ability students in obtaining information (retrieving information), interpreting text (interpreting text), and reflecting the text (reflecting text). Referring to the subscale, assessment of reading literacy was developed based on three main things, namely situation, text, and aspects.

Second, the average score of Indonesian students' reading competence during the 2000 to 2015 period generally decreased and achieved an average score still below other countries so that Indonesia was ranked 60th out of 72 countries in the 2015 PISA results. Third, the PISA impact for development reading learning in Indonesia is the amount of research related to the development of reading literacy in Indonesia and the Minister of Education and Culture Regulation No. 23 of 2015 concerning the Growth of Budi Pekerti which requires students to read 15 minutes before learning begins. The regulation contains the declaration of a movement about literacy to foster a reading of Indonesian students in elementary to high school levels. The School Literacy Movement is a movement that has just been launched by the Ministry of Education and Culture on the basis of *Permendikbud* No. 23 of 2015. Then, this movement was further expanded by the Ministry of Education and Culture Ministry's Development and Language Development Guidance Center to the National Literacy Movement (GNLB) the aim is to foster a culture of literacy and the literacy climate is not only in schools but also in society at large.

ACKNOWLEDGMENT

Thank God, the writer always prays to the presence of Allah SWT for the permission of this article to be completed in time. Thank you to: (1) Dr. Syamsi Kastam as chairman of the Head of Indonesian Language and Literature Education at Postgraduate Program of UNY.; (2) Prof. Dr. Suminto A. Sayuti and editorial team of International conference on interdisciplinary language, Literature and Education. Hopefully this article can contribute to literacy activities.

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