TIMSS AND PISA-HOW THEY HELP THE IMPROVEMENT OF EDUCATION ASSESSMENT IN INDONESIA

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ABSTRACT

This paper aims to highlight whether the data obtained by PISA (Programme for International Student Assessment) and TIMSS (Trends in International Mathematics and Science Study) survey is utility for the improvement of assessment in Indonesia. With regard to the data got from related literature it is found that there are some utilizes that Indonesian can learn from other countries such as Singapore to improve its assessment system in education, especially with regard to Ujian National (National Examination) that until today still becomes a big issue. Accordingly, there are five positive information that can be utilized and can be used as the strating point to build up good assessment in education system in Indonesia. First, about the system of conducting Ujian National. In term of that the government should pay attention on the ability of the students overall, not only in urban area but also in rural area. Second, about the environment. Here, the government should create a fair circumstance in examination setting. Third, about culture. Fourth, about time management. With regard to this the government should pay attention on the students schedule for preparing Ujian National. Finally, about administration system. Relating to this government should pay attention on the administration system to avoid corruption of time, cheating and many other problems.

KEYWORDS

TIMSS; PISA; education; assessment system; Ujian Nasional

INTRODUCTION

In this globalization era, people compete for jobs not just locally but internationally. The integrated worldwide labour market means that highly-paid workers in wealthier countries are competing directly with people with much the same skills but who demand less compensation in lower-wage countries. The same is true for people with low skills. Hence most countries, including Indonesia cannot avoid this defiance, and it also has to follow the flow of blooming trend in international field.

Assessments for learning outcomes are pivotal tools for governments to evaluate the effectiveness of their own education systems, to guide reforms of education quality and to compare the achievements local youth to those other countries. They are especially crucial in today's policy climate where local, national and international education stakeholders are increasingly calling upon governments to demonstrate results and outcomes, as opposed to input, such as activities, programs and reforms.

To accomplish this issue TIMSS and PISA survey conducted to measure the performance of education system in a country and to know its position among international countries. Based on PISA's result in 2012 and TIMSS's result 2011, Indonesian students 'achievement was poor. On PISA 2012, Indonesia ranked 64 of 65 participant's countries and TIMSS 2011, Indonesia ranked 36 of 40. This situation wakes up the Indonesian government, especially the Ministry of Education. They should evaluate why it happened and how it happened. In fact,Indonesia has conducted Ujian National every year which the same subject tested, namely Math, Science and English at Ujian National. And before the the test, the students have been prepared long time to succeed the test. However, they still got poor ability.

Even though many critics about the result issued by PISA and TIMSS survey, there are some utilizes that Indonesian can learn to improve its assessment system, especially with regard to Ujian National (National Examination) that until today still becomes a big issue. Some suggested abolishingit meanwhile the Ministry of Education still defends to hold this test because it is one of Indonesian standards of assessment system in education.

In Indonesia, National assessment called Ujian Nasional (UN) until now has been subject of controversy since its initiation. Some argue that the exam is too hard and demanding for students and teachers. Schools are forced to allocate more time for drilling students, putting more workload to both teachers and students. Critics argue that it did not give an accurate picture about Indonesian student's real competency, because of many problems and other issues. Some called for the National Exam to be abolished. However, the Education and Culture Ministry has so far still defended National Exam for keeping national standard of the country. With regard to this issue, this study will offer the information to government how the data obtained by PISA and TIMSS is utility for the improvement of Education assessment system in Indonesia. Hopefully, the Ministry of education together with Indonesian government can learn some experiences from somecountries and take this information to find good solution of the issue.

This paper is to highlight whether the data obtained by PISA and TIMSS survey is utility for the improvement of assessment in Indonesia

EVALUATION SYSTEM OF EDUCATION IN INDONESIA

Indonesians are required to attend twelve years of school. They must go to school six (or five, depending on the institution) days a week from 7. 30 a. m. until afternoon (usually 2 or 3pm). They can choose between state-run, nonsectarian public schools supervised by the Department of National Education (Depdiknas) or private or semi-private religious (usually Islamic) After completion them, they may be attend three years of high school (Sekolah Menengah Atas or SMA). Some high schools offer an accelerated learning program so students who perform well can complete their level within two years. Besides high school, students can choose among 47 programmes of vocational and pre-professional high school (Sekolah Menengah Kejuruan or SMK), divided in the following fields: technology and engineering, health, arts, craft and tourism, information and communication technologies, agro-business and agro-technology, business management. Each requires three years of study (EP-Nuffic, 2015).

UNESCO-UNEVOC (2013) says that there are academic and vocational junior high schools that lead to senior-level diplomas. There are also "domestic science" junior high schools for girls. At the senior high school level, three-year agricultural, veterinary, and forestry schools are open to students who have graduated from an academic junior high school. Special schools at the junior and senior levels teach hotel management, legal clerking, plastic arts, and music. Students with disabilities/special needs may alternately opt to be enrolled in a separate school from the mainstream called Sekolah Luar Biasa (lit. Extraordinary). In addition, because of that Indonesia keeps looking forward to improve the standard of education, especially its evaluation system or assessment system in education.

Indonesia, as well as other countries in the world has its own evaluation system or assessment system as a clear picture about the quality of the country. Indonesia applies both centralized and decentralized system of education Evaluation. Class room based- assessment is a manifestation of decentralized system of evaluationin education. The process of assessment is only in the school level. Meanwhile Indonesia also hasNational Exam (Ujian Nasional, commonly abbreviated as UN or UNAS) is manifestation of centralized system of evaluation in education. This is a standard of evaluation system of primary and secondary education in Indonesia and the equation of quality of education levels among the areas that are conducted by the Center for Educational Assessment (Kementerian pendidikan dan kebudayaan, 2012).

The Department of Education in line withThe Law of the RepublicIndonesia number 20 of 2003 states that, in order to control the quality of education nationwide to be evaluated as a form of accountability of education providers to the parties concerned. In addition,the evaluationsconducted by independent agencies on a regular basis should becomprehensive, transparent, and systematical in order to assess the achievement of national education standards. The monitoring processof evaluation should be done continuously. Evaluation of the monitoring process is carried out continuously to reachthe fixquality of education. Improving the quality of education begins with the determination of the standard. This is expected to encourage the increased of uality of education (Kuipers, Joel C. (2011). In UN, the subjects tested at elementary school (Sekolah Dasar/Madrasah Ibtidaiyah) are Indonesian language, Math and Science,meanwhileat secondaryjunior school (Sekolah Menengah Pertama/Madrasah Tsanawiyah (SMP/MTs) are but add English, However, at junior High school (Sekolah Menengah Atas/Sekolah Menengah Kejuruan/Madrasah Aliyah (SMA/SMK/MA), The subjects tested are as the following table:

Streams	Main course	Vocational course
Natural science	Indonesian, English, Math	Physics, Chemistry, Biology
Social studies		Economy, Geography, Sociology
Language		Indonesian literature, History/Anthropology, Choice of foreign language (Mandarin, Japanese, German,French, Arabic)
Religion (MA)		Science of Tafsir, Science of Hadith, Science of Kalam, Arabic
Vocational(SMK)		History, Vocational theory, Vocational Practice

Preparation of standard setting begins with the determination of the approach used in setting standards. There are three kinds of approaches that can be used as a reference, namely: determination of standard based on the general impression of the test, determination of standard based on the contents of each test item, and determination of standards based on test scores. At the end of each learning activity is concluded and accounting standard setting based on three approaches to determining the limits of graduation(Kementerian pendidikan dan kebudayaan, 2012).

INTERNATIONAL ASSESSMENT

In the last 20 years, international surveys assessing learning in reading, mathematics and science have been headline news because they put countries in rank order according to performance (UK) Two of them areTIMSS andPISA. The first to be run was TIMSS (Trends in International Mathematics and Science Study) in 1995, although it was a successor of international studies going back to the 1960s. it is now repeated every 4 years and tests learners of 10 and 14 years old. It is managed by the International Association for the Evaluation of Educational Achievement (IEA). The second one is PISA (Programme for International Student Assessment), startingin 2000, with a survey that is repeated every three years. This survey assesses learners who are a little older – aged 15 – and are nearing the end of compulsory secondary education. It assesses performance in reading, mathematics, science and problem solving. Special focus is placed on one of these areas in each year of assessment. PISA is a project of the Organisation for Economic Cooperation and Development (OECD). Each participating country has an agent that runs the survey – in the UK; it is the National Foundation for Educational Research (NFER) – which invites a sample of schools to take part (OECD, 2014).

The OECD's Programme for International Student Assessment (PISA) is held every three years and in 2012 more than 510,000 students of 15-years of age from 65 countries took part, including selected GCC States. Over the past decade, the OECD Programme for International Student Assessment (PISA) has become the world's premier yardstick for evaluating the quality, equity and efficiency of school systems in providing young people with skills to achieve their full potential, and participate in an increasingly interconnected global economy. A study by the Organization for Economic Cooperation and Development (OECD) reveals that students from the GCC attain lower scores in mathematics compared to those from nations that are relatively resource-poor.

More than 70 countries have signed up to take part in the PISA assessment in 2015, which will focus on science. Moreover, the 2013/14 EFA Global Monitoring Report highlights the role of international assessments including PISA, TIMSS, & PIRLS in monitoring learning progress across countries. While the international assessments provide a global measure of whether all children are learning the basics, national assessments complement this measure by monitoring progress within countries towards achieving a wider set of learning outcomes (UNESCO, 2014).

THE IMPORTANT OF INTERNATIONAL ASSESSMENT

There are several benefits of international surveys: First of all is about the policy. Governments need to know what is going on in the systems for which they are responsible. Leaders have to decide where to allocate resources according to greatest need. International surveys could help them to make better decisions based on clearer data. The announcement of performances has had a significant impact on national discussions about education systems. Then, schools and teachers can reflect on a survey's global analysis and consider recommendations for good practice. The surveys obtain supplementary information through questionnaires and correlate this with the test results. For example, PISA 2012 states that lack of punctuality and truancy are negatively associated with test performance, and makes recommendations regarding learner engagement. Third, national research and professional development program often use the data from the international surveys as a starting point (Cambridge, 2015).

TIMSS AND PISA

Table 1 provides a brief overview of the assessments in regard to general test information, purpose, population, and administration. In-depth information about two international assessments is as follow:

PISA TIMSS

Assesment	Programme for International	Trends in International
Name	Student Assessment	Mathematics and Science Study
Primary	• Evaluates education systems of	• Measures trends in student
purpose	various countries;	achievement in mathematics and
	• Assesses the extent to which	science;
	students have acquired the	• Gathers information about
	knowledge and skills that are	learning contextsfor mathematics
	crucial for participating fully in	and science;
	society;	• Gathers data about the
	 Provides acknowledge base for 	mathematics and science
	policy analysis and research; and	curricula in each country; and
	• Measures trends over time related	 Provides countries
	to student and school	with information to improve
	characteristics	teaching and learning
Subject are	Reading, mathematics, science	Mathematics, science
tested		
Responsible	Organisation for Economic	International Association for
Organization	Co-operation and Development	the Evaluation of Educational
	(OECD)	Achievement (IEA)
Years of	2000, 2003, 2006,	1995, 1999, 2003,
Administraiton	2009, 2012,2015	2007, 2011,2015
Grade/Age	15-year-olds	Grades 4 and 8
assessed		
Type of Test	Criterion referenced	Criterion referenced
Levels	Reading 1a–5,	Low, intermediate,
Reported	Mathematics 1–6,	high, advance
	Science 1–6	

Note: This table is adapted from Egan, Beattie, Byrd, Chadwick, and DeCandia (2011). Additional information for TIMSS is from the International Association for the Evaluation of Educational Achievement (2011), and additional information for PISA is from the Organisation for Economic Co-operation and Development (2009).

PISA has been administered by the OECD every three years since 2000 to a representative sample of 15 year-olds in a given country. PISA's primary focus has been the OECD countries, but it has progressively incorporated countries outside of the OECD as well. It focuses on 15-year-olds' capabilities in reading literacy, mathematics literacy, and science literacy. PISA also includes measures of general or cross-curricular competencies such as problem solving. PISA emphasizes functional skills that students have acquired as they near the end of compulsory schooling. The number of countries participating in PISA has increased from 32 in 2000 to 67 in 2009.

TIMSS has been administered by Boston College under contract to the IEA every four years since 1995 to a representative sample of 4th and 8th grade students. The tests focus on mathematics and science literacy. Forty-one countries along with two 'bench markers' participated in TIMSS in 1995; 59 countries participated in TIMSS in 2007 along with six 'benchmarking' participants (OECD (2012)

HOW INTERNATIONAL SURVEYS (TIMSS AND PISA)USED INOTHER COUNTRIES

One benefit of using PISA data is having the ability to determine what constitutes a successful school. In addition, OECD (2010a) mentioned thata successful school is one that performs above average and has fewer socioeconomic inequalities. And also it should provide the equity of chance to everybody evenembraced diverse students and personalized education.

In countries where students tend to repeat grades more often, socioeconomic performance gaps were wider. Also, greater gaps were found where tracking occurs at younger ages. Notably, successful school systems placed priority on paying teachers more for better quality work, rather than hiring more teachers (OECD, 2010a). This practice may be important for policymakers to be aware of when considering the use of teacher incentives.

Another publication by the OECD reviewed PISA and its value in terms of education reform, specifically as it relates to what the U. S. can learn from the PISA results. The OECD (2011) provided definition for a high-performing country: This volume defines countries as high performing if: almost all of their students are in high school at the appropriate age, average performance is]high and the top quarter of performers place among the countries whose top quarter are among the best performers in the world (with respect to their mastery of the kinds of complex knowledge and skills needed in advanced economies as well as their ability to apply that knowledge and those skills to problems with which they are unfamiliar); student performance is only weakly related to their socioeconomic background; and spending per pupil is not at the top of the league tables. Put another way, this volume defines superior performance as high participation, high equity and high efficiency. (p. 14)

The OECD (2011) also provided a section devoted to how PISA can be used to help improve education systems in addition to examining causal relationships between various factors and performance. Accordingly, there are severalways in which PISA data can be used to improve education systems. He said thatPISA scores provide information regarding attainable educational achievements. For example, Finland had little variation in performance between schools, as those students coming from disadvantaged socioeconomic backgrounds did not always perform as poorly as students from similar backgrounds do in the U. S. The U. S. can use PISA scores of high-performing countries to set specific, measurable goals that have been achieved by these systems. Then, PISA can also be used to monitor progress andPISA can be linked to national assessments.

Phillips and Jiang (2011) described how PISA is used for internationally benchmarking state performance standards. Items from PISA are embedded into state assessments and calibrated to the state scale, and common-item linking matches the state scale to the PISA scale. The linking can then determine which state standards are considered internationally competitive. In addition, PISA data alsohelp countries determine the pace of improvement by validating scores internationally. Moreover, the extensive background information collected by PISA tellsabout factors associated with higher performance (OECD, 2011)

With regard to how the use of PISSA and TIMSS survey, some can be good, the rest should be vice versa, as the followingwritten in Cambridge (2015).

Commonly, the rank orders of these surveys create a lot of public interest. Those countries whose pupils come near the top – for example Finland and Singapore – are inundated by requests to study their systems. Countries that do not do so well find questions being asked by the press, and their politicians are required to give explanations and outline strategies to address the 'national shortcomings'. For example, in Germany the 2001 PISA results, which were lower than expected, caused 'PISA-shock'. Another example is the USA, where concerns about PISA performance led to development of national Common Core Standards. In addition, International surveys can lead to simplistic conclusions about education systems, which are unhelpful and do not do justice to the more detailed information provided by the surveys.

From Cambridge (2015) there are some aspects shared about how international survey relevant to Cambridge.

1. Cambridge partners may refer to surveys, for example, the 2012 PISA results show that Singapore Is above average and that the UK is average in math and reading and above average in science.

2. National governments may request Cambridge collaboration in curriculum reform based on national performance in international surveys such as TIMSS.

3. In relation to curriculum development, Cambridge Assessment cautions: "Analysis of high performing systems, when treated with sophistication and sensitivity, can be used fordetermining which content should be placed where in a revised National Curriculum." However, "policy needsto be formulated in respect of other 'control factors' such as teacher expertise, teaching quality, learning materials and inspection" (Tim Oates, Group Director of Assessment Research and Development, 2010).

4. International surveys are driving ambition for improvement and greater interest in learning from experiences. These are good things as long as we keep league tables in perspective.

5. Cambridge provides educational solutions that meet the specific needs of our national partners and are informed by international standards, debate and practice. It is therefore important that Cambridge understands the conclusions that are being drawn by partners from international surveys.

In addition,Indonesia also can learn from Singapore, one of the success countries in Asia and it isan Indonesian neighbor country that has been followed TIMSS since 1995and PISA in 2007. Here, Indonesia can learn how thedata of International survey such as PISA and TIMSS help it to develop better. It can learn how Singapore uses these international surveystobuild thecountry. These will inspire the Indonesian government to follow its effort to build up its country in all aspects of education, including the system of assessment in education especially the system of Ujian Nasional (National Examination) that until now is still in dilemma.

More than any other countries in the world, Singapore has aggressively pursued a policy of advancing in education and other arenas by systematically benchmarking the world's best performances and creating a world class education system based on what they have learned through their benchmarking: alignment of the education system to economic development goal, an integrated system of planning, a clear vision of what is needed in education, accountability ,serious attention is paid to setting annual goals, to garnering the needed support to meet them and to assessing whether they have been met, close links between policy implementers, researchers and educators. At the institutional level, both policy coherence and implementation consistency are brought about by the very close tripartite relationship between the Ministry of Education, the National Institute of Education (NIE, the country's only teacher training institution), and the schools. The Ministry is responsible for policy development, while NIE conducts research and provides pre-service training to educators. NIE's research is fed back to the Ministry and is used to inform policy development. Singapore is a 'tightly coupled' system in which the key leaders of the ministry, NIE, and the schools share responsibility and accountability (OECD, 2011)

Singapore promoted commitment to equity and merit. The goal of the education system is to nurture every child, no matter what his ability or achievement level. A strong focus was on mathematics, science, and technical skills. In both primary and secondary, mathematics and science are core subjects. The approach to mathematics, developed in the 1980s from reviews of mathematics research around the world and refined several times since, is based on the assumption that the role of the mathematics teacher is to instill 'math sense'. Teachers cover far less material than they do in many other countries, but they cover it in depth; the goal is to master mathematics concepts. The national science as inquiry. Co-curricular activities such as mathematics and science fairs, competitions, and learning trails (where students apply mathematics and science concepts in outdoor settings) are used to generate interest in the subjects among students. (OECD,2011)

In short, this country also pays attention onHigh-quality teachers and principals, comprehensive teacher training and compensation, teacher compensation competitive with other professions, strong commitment to professional development, and a comprehensive approach to teacher performance appraisal and to recognizing effective teachers (OECD: 2011)

HOW INTERNATIONAL SURVEYS HELP TO IMPROVE INDONESIAN EDUCATION ASSESSMENT SYSTEMS

The 2012 PISA results showed that Singapore is above average and that the Indonesia is poor in math and reading and n science (OECD, 2014). Meanwhile

those subjects are tested every year in Ujian National (National Examination). The survey offers a positive input to IndonesianNational governments, especially the Ministry of education to evaluate why it happened. They have to pay attention on their strategy of doing the examination, the contentof examination, the administration system used when tested andmany others. The governmentmay request collaboration in curriculum reform based on national performance in international surveys such as TIMSS and PISA.

In relation to curriculum development, Indonesian education system should analyzeof high performing systems thattreated with sophistication and sensitivity to be used for determining which content should be placed where in a revised of national curriculum when it get the result below average. However, policy needs to be formulated in respect of other control factors such as teacher expertise, teaching quality, and learning materials.

Apart from many critics of theresult issued byInternational surveys (TIMSS and PISA), these are driving ambition for improvement and greater interest in learning from other countries' experiences. These are good things as long as we keep league tables in perspective. Some researchers have criticized the reliance of countries upon international assessments, specifically PISA. In a journal article, Bracey (2009) argued that the use oftest scores, specifically average test scores, for comparing education systems is a mistake.

According to PISA results, the U. S. ranked around the middle compared to other countries, although, as Salzman and Lowell (2008) pointed out, looking at the number of people withhigh scores in each country could be more effective, as not examining the amount of high andlow performers makes scores "irrelevant as a measure of economic potential" (as cited inBracey, 2009, p. 450). Looking at the number of people who reached the highest level on thePISA science test shows that the U. S. ranked first compared to Japan and Finland, both high performing countries. Korea, also a high performer, had a smaller proportion of high scorersthan the U. S. (1. 1% vs. 1. 5%). However, if we are to base performance upon the number of high-scoring students, we may also have to consider the number of low-scoring students, andthe U. S. was the second lowest among all other OECD nations. Bracey emphasized that mostof the variation was within the countries, rather than between, so perhaps the better solutionis for the U. S. to compare itself to specific states that are successful rather than other nations.

In addition, Bracey thought that the recommendations based on PISA results might not beculturally relevant: "Sending children to classes six days a week, extra preparation coursesnights and weekends, and having a single examination that decides their fate, as is done inJapan, is not a choice most U. S. parents would make" (p. 450). Based on this idea, somelessons previously mentioned in this review may not be applicable, as they would require theU. S. to make fundamental cultural changes in addition to policy changes. (F-Tony reseach review 2015 International comparative assessment) The rank orders of these surveys create a lot of public interest. Those countries whose pupils come near the top – for example

Finland and Singapore–are inundated by requests to study their systems. Countries that do not do so well find questions being asked by the press, and their politicians are required to give explanations and outline strategies to address the 'national shortcomings'. For example, in Germany the 2001 PISA results, which were lower than expected, caused 'PISA-shock'. Another example is the USA, where concerns about PISA performance led to development of national Common Core Standards. International surveys can lead to simplistic conclusions about education systems, which are unhelpful and do not do justice to the more detailed information provided by the surveys.

There are differences between PISA, and TIMSS. The latter are curriculum-based and require certain content to have been covered by the nominated years. Therefore, a country's weaker performance in TIMSS may be a result of certain topics not having been covered. PISA, on the other hand, focuses less on curriculum content and more on skills required in the modern world.

The rankings for individual countries will only be accurate within a certain range of probability, which may mean that a high ranking could have been an average ranking. For example, the UK's math ranking for 2012 can be seen to be 26th but PISA acknowledge it could be anywhere between 23rd and 31st. Margins of error for the rank orders are published but often ignored.

A particular county's ranking masks regional variations, which, even if reported by PISA, may not always reach the attention of the public. For example, in the 2012 results, Massachusetts has a high score for Math whereas Florida has a lower score. The statistical model of surveys such as PISA has been criticized (and refuted by OECD) – for example: Is PISA fundamentally flawed? (TES, 23 July 2013). The wider development of children might be compromised by excessive hours in the classroom, private tutors and increased stress in an attempt to increase rankings.

With regard to above critic of PISA and TIMSS survey, Indonesian Government learns many things. First of all, about the system of conducting Ujian National,the government has to pay attention on the ability of the students overall, not only in urban area but also in rural area because Indonesia isa big country. The students who are from urban area will perform better because they have good facilities and have enough professional teachers as well meanwhile in rural area they are vice versa. Secondly, the government also has to create a fair circumstance in examination setting. Thirdly, the government has to pay attention about student culture to avoid of being stress. Fourthly, the government should pay attention on the students schedule for preparing for Ujian National. Finally, the government should pay attention on the administration system to avoid corruption of time, cheating and many other problems.

Regarding to that point, Indonesian Ministry of education gets the information that basicallyboth National and International assessment play the same role in term of the assessment but the differenceis that the levelevaluated. Because of that the government of Indonesia has to construct a good planning as well as application. They have to realize if they want to put this Ujian National as one of standard assessment in the system of Education, they should learn and evaluate what should they follow of the system, methods, and also strategy used in International assessment such as PISA and TIMSS and avoid from something bad that create the critic as it still happened in Indonesia.

In additionEffective use of assessment findings includes applying the information gained to improve the quality of student learning. It follows that a commitment to successive assessment exercises over time is essential to fully reap the benefits of expenditure on assessment exercises. This demands institutionalization of the assessment process, integration of assessment information into Education Management Information Systems, and alignment of national assessment to other elements of the education system such as community-based assessment initiatives. Political commitment to lead reform, evidence-based resource allocation and skilful change management—as well as the technical capacity in assessment—are integral to national assessment programmes(OECD, 2014)

In short, Indonesia shouldprovide goodeducational assessment systemsolutions that meet the specific needs of itsnational partners and are informed by international standards (TIMSS and PISA), It is therefore important that Indonesia understands the conclusions that are being drawn by partners from international surveys. The improvement should be taken especially how to plan a good strategy to run Ujian Nasional in the future, so that it can fulfill what the need of Indonesian society. Because of that the Ministry of Education can run this examination without any difficulty and facing many critic of being abolished.

CONCLUSION

Apart from many critiques of International Assessment (TIMSS and PISA) survey, there ismuch positive information that can be utilized and can be used as the strating point to build up a good education system in a country.

Hence, with regard to Ujian National systemas a manisfastation of centralization system of assessment in Education, there are five important points that the Indonesiang overnment, especially the Ministry of Education should payattention. So that they candefend it from any cricicts of being abolish that Examination. First of all, about the system of conducting Ujian National, the government has to pay attention on the ability of the students overall, not only in urban area but also in rural area because Indonesia is big country. The students who are from urban area will perform better because they have good facilities and have enough professional teachers as well meanwhile in rural area they are vice versa. Secondly, the government also has to create a fair circumstance in examination setting. Thirdly, the government has to pay attention about student culture to avoid of being stress. Fourthly, the government should pay attention on the students schedule for preparing for Ujian National. Finally, the government should pay attention on administration system to avoid corruption of time, cheating and many other problems.

REFERENCES

- Adams, D. & Hamm, M. (2010). Demystify math, science, and technology: creativity, innovation, and problem-solving. Plymouth, UK: Library Materials, ANSI /NISO.
- Alexander, R. (2013). How accurate is the PISA test? BBC News Magazine, 10 December 2013,01. 22 a. m. Accessed from: http://www. bbc. com/news/magazine-25299445 on 21September 2014, 04. 35 p. m.
- Baird, J., et al. (2011). Policy effects of PISA. Oxford University Centre for EducationalAssessment.
- Bracey, G. W. (2009). PISA: Not leaning hard on U. S. economy. The Phi Delta Kappan. 90(6). 450–451.
- British Council. (2012). Country Background Report on the Education Sector in Indonesia (ACDP-002). Working Paper. British Council.
- Cambridge International Examinations. (2015). International survey: PISA, TIMSS and PIRLS. Education Brief 7 Combridge IGCSE.
- Chetty, R., J. N. Friedman, and J. E. Rockoff. (2011). The long-term impacts of teachers: teacher value added and student outcomes in adulthood. National Bureau of Economic Research (NBER). Working Paper No. 17699, December.
- Darling-Hammond, Linda and Robert Rothman. (2011). Teacher and Leader Effectiveness in High Performing Systems. Stanford Center for Opportunity Policy in Education.
- EP-Nuffic. (2015) Education system Indonesia: 2nd edition February 2011, EP-Nuffic Publishing
- EQUIP2. (2015). Examining the Role of International Achievement Tests in Education Policy Reform: National Education Reform and Student Learning in Five Countries: policy Paper, USAID
- Gillies, John A. (2010). The Power of Persistence: Education System Reform and Aid Effectiveness, Case Studies in Long-Term Education Reform. Washington. DC
- International Association for the Evaluation of Educational Achievement [IEA]. (2015) TIMSS 2015 Assessment teams work. TIMSS & PIRLS International Study Center. Lynch School of Education, Boston College, Chestnut Hill, MA.
- International Association for the Evaluation of Educational Achievement [IEA] (2012b) TIMSS 2011 International Results in Mathematics. TIMSS & PIRLS InternationalStudy Center. Lynch School of Education, Boston College, Chestnut Hill, MA.
- Kementerian pendidikan dan kebudayaan. (2012). Dokumen kurikulum 2013. Accessed from: http://kangmartho. com

- Kuipers, Joel C. (2011). Education in Indonesia: A Country Study, Library of Congress Federal Research Division.
- McKinsey Company. (2007). How the World's Best Performing Education Systems Come out on Top. ISA, TIMSSA,
- Meyer, H. D. and Benavot, A. eds. (2012) Pisa, Power and Policy: The Emergence of Global Educational Governance. Oxford Studies in Comparative Education
- Ministry of Education and Culture [MoEC] (2013)'Overview of the Education Sector in Indonesia 2012:Achievements and Challenges'. Jakarta: MoEC.
- Ministry of National Education [MoNE]. (2007). 2007 EFA Mid Decade Assessment:

Sustaining EFA Performance in Indonesia. Jakarta: Education for All Secretariat.

- Mullis, I. V. S., et. al. (2009). TIMSS 2011 Assessmet frameworks. Amsterdam, Netherlands.
- International Association for the Evaluation of EducationalAchievement [IEA] (2012a)
- Oates, T. (2010) Could Do Better: Using International Comparisons to Refine the National Curriculum in England. UK: Cambridge Assessment.
- OECD. (2009). PISA 2009 assessment framework: key competencies in reading, mathematicsand science. Paris: OECD Publishing.
- OECD. (2012). PISA 2012 assessment and analytical framework: mathematics, reading, science, problem solving and financial literacy. PISA. OECD Publishing.
- OECD. (2011). "Chapter 7: Singapore Rapid Improvement Followed by Strong Performance." Strong Reformers and Successful Performers: Lessons Learned from PISA for the United States.
- OECD. (2014). PISA 2012 results: what students know and can do student performance inmathematics, reading and science (Volume 1, Revised Edition, February 2014). PISA: OECD Publishing.
- Pradhan, M., et al. (2013). Improving Educational Quality through Enhancing Community Participation: Results from a Randomized Field Experiment in Indonesia. World Bank Policy Research Working Paper 5795. Washington, DC: World Bank.
- Puspendik. (2011). Survei Internasional PISA. Accessed from:http://litbang. kemdikbud.go.id/sekretariat/index. php/penilaianpendidikan/surveiinternasional-timss/12-puspendik/110survei-internasional-pisa on 12 July 2014

- Salzman, H., & Lowell, L. (2008). Making the grade. Nature, 453, 28-30. Retrieved fromhttp://www. nature. com/nature/journal/v453/n7191/full/453028a.html
- Salsabilla, A. P. (2013). Laporan evaluasi pembelajaran: validasi soal PISA dan TIMSS. Palembang: Fakultas Keguruan dan Ilmu Pendidikan Universitas Sriwijaya.
- Suharti (2013) 'Trends in Education Indonesia', in Suryadarma, D. and Jones, G. W. (eds) Education in Indonesia. Singapore: ISEAS
- Stephen, M. (2013). PISA: Poor academic standards and an even poorer test. Accessed from:http://www. telegraph. co. uk/education/10488665/PISA-Poor-academic-standards-and-an- even-poorer-test. html on 21 September 2014, 05. 05 p. m.
- Phillips, G. W., & Jiang, T. (2011). Using PISA to internationally benchmark stateperformance standards. Paper presented at the 2011 annual conference of the American Educational Research Association, New Orleans, LA. Retrieved from http://www.schoolinfosystem.org/pdf/2011/06/ pisabenchmarkstates. pdf
- UNESCO-UNEVOC (2013). Vocational Education in Indonesia. Retrieved 22 May 2014.
- USAID. (2011). Opportunity through Learning: USAID Education Strategy.
- Tony. D. et. al (2012). International Comparative Assessments: Broadening the Interpretability, Application and relevence to the United States. Research Review 2012 College Board
- Welsh Government. (2012). A Guide to using PISA as a Learning Context gov. wales/docs/dcells/publications/120629pisabookleten.pdf