

# Looking Through The Implementation Of K-13 Through The Lens Of AQEE Principle From OECD; What Should Be Improved From Our K-13 Implementation In Order To Be Internationally Competitive?

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## ABSTRACT

Indonesia, as the fourth most populated country in the world, will be having a demographic bonus by 2030 in which 60% of its population will be in the productive range of age (15-63 years old) (Afandi, 2017). To anticipate this economical advantage, there are several strategies developed to better prepare Indonesia's human capital and one of the anticipated strategies in the educational sector is through the 2013 National Curriculum reform or Kurikulum-2013 (K-13). Indonesia's National Education Act number 20 in 2013 (Depdiknas, 2013) stated that the main objective of this new curriculum is to better prepare the students comprehensively both academically and non-academically. Nevertheless, the implementation of K13 has not reached its academic target to say the least, based on the decline of students achievement in the national examination for the past 4 years after the implementation of K-13 In addition, evaluation through a national survey of K13 has not been conducted, making it hard to evaluate which aspects of this K-13 implementation that need to be improved in the coming years. This paper aims to evaluate K-13 against the AQEE (Access, Quality, Equality and Efficiency) principle from OECD (Organization for Economic Co-operation and Development). This AQEE principle is derived from the results of the PISA test (Program for International Student Assessment) that is widely used by more than 80 countries worldwide over the years. Through the evaluation of this international assessment, a highly qualified system of education needs to have all these 4 dimensions of the AQEE principle. The finding shows that K-13 does not fully meet the AQEE standards, primarily because of the Equity and Quality aspect.

*Keywords: AQEE, OECD, Curriculum Reformation, K-13, Kurikulum 2013, Access, Quality, Equity, Efficiency, Disparity, International Assessments, PISA, TIMSS.*

## 1. Background

In this globalization era in which the rate of exchanging knowledge and technological ideas across the globe is increasing, the demands to better the quality of human capital and economic development have become top priorities in each nation. Countries seek to learn from others hoping that there would be some more insights and innovations acquired from other contexts that fit into their own cultures. The interest in comparing the quality of prospect human development index through an international assessment of education is attracting more countries. Two of the most popular kinds of international assessments are the Program for International Student Assessment (PISA) and the Trends in International Mathematics and Science Study (TIMSS). As of 2018, there have been 80 countries and economies joined in PISA test (PISA: Upcoming Results from PISA 2018, 2018.)

Indonesia as the 4th most populated country in the world has prepared several education strategies for the demographical bonus by 2030 in which 60% of the population will be in the productive range of age (15-63 years old) (Afandi, 2017). The challenge now for Indonesia is not about providing access to education but rather enhancing the quality of education because according to the census of education from Statistics Indonesia (Badan Pusat Statistik, 2015), the enrolment rate ranging from 13 to 15 year of age has increased from 88% of students in 2011 to almost 95%. Enhancement of training for educators as well as providing access to vocational education and maintaining its quality are some strategies proposed to better prepare the young generation with high-quality skills for this opportunity (Afandi, 2017). It is significant for Indonesia to undergo educational reformation through these strategies because in order to survive in today's knowledge-based economy, students need to have abilities to find, analyze and use the information to solve real problems, defend ideas and

manages projects to develop greater learning skills (Darling-Hammond & McCloskey, 2008).

## 2. Indonesia and its PISA results over the years

Since the first participation of Indonesia in the PISA test in 2000, overall, Indonesia has shown some improvement especially from 2012-2015. Quoting from OECD report of PISA 2015, Kemendikbud or the Department of Education of Indonesia (“Peringkat dan Capaian PISA Indonesia Mengalami Peningkatan,” 2016) released the result of PISA 2015 and stated several key improvements that year (see Fig. 1)



Fig. 1. Indonesia's PISA results' trend.

From the infographic, it is noticeable that between 2012 and 2015 alone, science performance among 15-year-old students rose by 21 score points making Indonesia the fourth-fastest improving education system among 72 participating countries that year and the PISA coverage rate in the last decade has shown great improvement with 15% increasing sample from 2006 to 2015 (53% to 68.2%). This is indeed a good thing to know for a country that used to struggle with access to education several decades ago. However, when this result is compared to the other neighboring countries in South East Asia (ASEAN) regions such as Singapore, Vietnam or Thailand, then Indonesia is still trailing behind (ASEAN Post, 2018) (Fig. 2).

The PISA results show that Indonesia is still struggling, and it would be really hard for a higher education system in Indonesia to expand its capacity in the future to compete in the globalization era if the young generations are not well-prepared (Pellini, 2016). Thus, it is important to evaluate the implementation of this reformation of the curriculum in Indonesia.

## 3. Research Questions

This paper wants to examine several research questions related to curriculum 2013 as one of the ways to better the quality of education in Indonesia. The questions being examined are:

1. What was the initial intention of this new curriculum 2013 (C13) and what are the key elements of C13 that differ from previous curricula?
2. How is the implementation of curriculum 2013 (C13) in Indonesia through the lens of the Access Quality Equity

and Efficiency (AQEE) principle from OECD? Which aspects of the principle in C13 need to be improved?

## 4. Curriculum 2103 (C13) and Curriculum 2006 (C6)

The implementation of C13 intended to better prepare future generations with not only several sets of skills in the globally competitive world but also with an emphasis on moral education. According to Machali (2013), the improvements in C13 were based on some of the shortcomings found on C6 such as (1) the level of mastery was not appropriate to students' development, (2) the content was not fully competency-based, (3) C6's competency did not really reflect the emphasized domain of students' affective, skills, and knowledge-base, (4) C6 was considered not adaptable to the social changes, and demands of skills needed in the globalization era, (5) C6 tended to be a teacher-based approach, (6) C6 gave a lot of flexibility for the teachers or schools to create their own smaller set of curricula at their unit but it ended up with a lot of confusion from teachers because there was not enough assistance provided by the government.

Fig. 2. Indonesia's PISA Results compared to other ASEAN countries.



On the other hand, the emphasis on C13 was heavily focused on 4 different elements: Competency standard (SKL), Content Standard (SI), Standard Process, and Assessment Standards (Machali, 2013, Paparan Wamendik, 2014). First, for the SKL, the emphasis focused on the development of soft-skills and hard-skills of students that captured three different dimensions: students' behavior, knowledge and skillsets. Secondly, the SI in C13 used the opposite approach from the C6, which is by setting the learning competency for each of the topics first. Thirdly, the standard process of learning in C13 highlighted the scientific approach for every topic so that students can develop scientific skills in everything that they learn. This stresses the dimension of student-centered learning to inquiry knowledge through the learning process. Lastly, in the assessment standards, the assessment shifted from grading what is taught to the students to the use of the portfolio, formative assessment and summative assessment. To sum up, according to the Ministry of Education through the Ministerial decree no 81A in 2013, the implementation of C13 intended to bring four different fundamental changes in

the curriculum: thematic and integrative model of learning, scientific approach in learning to enhance students critical thinking skills, students' active learning, and authentic assessment.

Another key difference between these two curriculums lies in the way they were developed especially in a subject like English that included a few considerations such as culture social and geography. With thousands of islands in Indonesia and most of the development taking place in the western area of the country where the capital city is located, there is still a huge disparity of English level skills between the big cities and rural areas. However, this consideration was nowhere to be found when it came to the development of the C13 framework. While the English Curriculum in C6 (EC6) was developed by the Department of Education and Culture through the National Education Standards Board, English teachers, school principals, and the provincial department of education. EC13 did not involve provincial departments of education (Nuraeni, 2018).

## 5. AQEE Principle by OECD

Despite the reform of the national curriculum in Indonesia through C13 to prepare its young generation, there are several things to consider. As of now, after more than 5 years of its implementation, there has not been any national survey measuring the effectiveness of C13 in achieving its goals. This leads to a lack of guidelines as to what is a good curriculum or what is the definition of a high-performing education system. That is why through this paper, it is considered important to see through the lens of the AQEE principle defined by the OECD.

According to OECD (2010, p. 14) by reflecting on the PISA results that they conducted, a high performing system of education needs to make sure to have four different elements that are referred to as the AQEE principle. First is about access to education by making sure that almost all of their students are in high school at the appropriate age. The second is about the quality of education. This aspect aims to make sure that the average performance of the students is high, and the top quarter of performers are among the best performers in the world. The third is about the equity of education meaning that student performance is only weakly related to their socio-economic background. Lastly is about the efficiency in education by the use of available resources (spending per pupil is not at the top of the league tables). This means that all the policies of education have to be effective and efficient to achieve the intended outcomes. Ideally, these four aspects will synergize to make a high-performing education system.

## 6. Analysis

Through the lens of AQEE, the implementation of C13 will be examined further.

### 6.1. Access (A)

Since the first implementation of C13 in early 2013, it has brought a considerable amount of debate among educators. It is true that it should take years for educators to see the impact of this implementation of C13 and the debate from the educators about this implementation of the C13 should not be an issue at that time. However, the confusion and debate among educators at the time were merely due to the confusion in choosing which curricula to apply in each unit of school knowing that at that time there were two national curricula still applied in the same year (the C13 and the C6). Lack of guidelines and protocols, as well as publicity of the implementation of C13 from the government, was one of the main factors contributing to this long debate and confusion. In 2014, after a year of its implementation, a new Minister of Education and Culture was elected and issued a ministerial decree on curriculum evaluation to decide whether a revision is needed (Kemdikbud, 2014b). Two months later, the evaluation team found out that the teachers were not prepared to implement the curriculum (Kemdikbud, 2014d) and the minister issued another decree on the implementation of C6 and C13 (Nuraeni, 2018). The schools that continued implementing C13 were schools that had implemented it in the last 3 semesters while those that did not were instructed to continue with C6. Not only that, another problem arose. The majority of the teachers were not well equipped with C13. The resources for C13 such as textbooks for students and supplementary book resources for teachers were not ready. These are some of the reasons why the implementation of C13 in certain areas in Indonesia was delayed.

After 3 years of its implementation, one fundamental need for implementing C13 was still found lacking. According to the human resources quality census in Indonesia (Sensus Sumber Daya Manusia, 2016) overall, there was still a shortage of 268,900 teachers for high school and vocational education. However, for elementary and middle school there is a surplus of teachers. Another thing to note according to the National Education Survey for Elementary school, Middle School and High School in 2017 (Statistik SD, Statistik SMP, Statistik SMA, 2017) there are still a high number of classrooms that are needed to be repaired as they are not in good conditions. The elementary school (SD) has the highest number of total classrooms damaged (53.1%) followed by the high school (SMA) with 44.7% and middle school (SMP) with only 30%. However, on a more positive note, the number of students getting access to education in the academic year of 2017/2018 has increased significantly as the number of drop-out students decreased over the years. Less than 0.7% of students drop out at each level of school.

Overall, for the access dimension, it can be said that the majority of students in Indonesia have had access to education by enrolling in school. However, the quality of education offered needs more attention to improve.

## 6.2. *Quality (Q)*

According to Tucker (2011), there is a tripartite definition of a qualified teacher: 1) a high level of general intelligence, 2) solid mastery of the subjects to be taught, and 3) a high aptitude for engaging students and helping them to understand what is being taught. One notable issue related to the quality of the teachers in Indonesia according to the definition from Tucker (2011), is about the shortage of qualified teachers. According to the survey of human resources quality census in Indonesia (Sensus Sumber Daya Manusia, 2016), it showed that some core subjects like Math (Matematika), Biology (Biologi), Physics (Fisika), Chemistry (Kimia) and English (Bhs. Inggris) had the highest shortage of teachers ranging from 5,000 teachers to more than 10,000 for each subject. The shortage of teachers in these core subjects then also affects the quality of the learning process because teachers who teach these subjects in the classroom might not have any competency or any related background with the material that they teach. Not only that, the National Education Survey for Elementary school, Middle School and High School in 2017 (Statistik SD, Statistik SMP, Statistik SMA, 2017) showed the same trend. There is still a high number of teachers with no bachelor's degree ranging from 14% (elementary school level) to 30% (high school level). The absence of textbooks for C13 in the first year of its implementation was also another concern. When basic access to education such as access to qualified teachers and books are not met, it is then hard for the students to have the best experience in learning and hone their critical thinking skills as what C13 intended it to be.

Teachers' attitudes toward C13 are also interesting to analyze. From 2003-2013, there have been three changes to Indonesia's National Curriculum. In 2004, when a new cabinet took over the government, they introduced a new curriculum named Competency-based Curriculum (KBK). In 2006, 2 years later, the government introduced another new National Curriculum named Curriculum 2006 (C6 or KTSP). This change not only cost a lot of money but also created a lot of debate from educators in Indonesia. Within only 7 years of implementing the C6 and with another new cabinet take over of the government, a whole new National curriculum named Curriculum 2013 (C13) was introduced. A lot of doubt on this C13 was also something that the government needed to deal with in the beginning. The perceptions found are that teachers still need more exposure to understand its implementation and the senior teachers tend not to adapt their teaching style to the teaching approach in the new curriculum (Ratri & Yuliana, 2010, in Nureni, 2018, Yusufardiyah, Koniaturrohman, & Lismalayani, 2016, in Nuraeni, 2018). It is somewhat understandable especially for senior teachers who have been comfortable in their teaching methods and have been through a lot of changing of curriculums in the past 10 years; they will tend to use their old teaching methods. As a result, teaching innovation will not bring any impact to the students if they are not well implemented (Cohen, 1990, in Nuraeni, 2018).

The quality of teaching cannot be improved if the teachers in the learning process itself will not participate in this innovation. Adding more qualified teachers without having a proper way of training them would not be a sustainable way to enhance the quality of education. The strategies can be done through continuous training for teachers and school administrators at the local level by involving educators and stakeholders who know the social and cultural context. It is true that students need to learn and keep up with the technological advancement and the learning design needs to be updated through the changing of curricula, but we have to make sure that the changes fit the cultural context and they can be well-understood and well-implemented by all parties.

## 6.3. *Equity (E) especially between the western and eastern parts of Indonesia*

In 2013, the implementation of C13 was first piloted in only 6,221 schools across Indonesia as centers for training for other schools nearby (Kemendikbud, 2017). However, as of 2018 according to the data released by Kemendikbud (2017), there were still 78,000 schools across Indonesia that never implemented C13 at all. One of the factors contributing to this is related to geographical factors between two main parts of Indonesia namely the western and eastern parts. Based on the socio-political aspect, Indonesia is divided into two big regions namely western and eastern part and according to the Asian Development Bank and the World Bank, eastern Indonesia is the terminology used to represent all the area of Indonesia excluding Sumatera, Java and Bali islands (Parkinson, 1993). There is a huge socio-economic disparity between these two regions especially in the education sector.

There are several factors related to this disparity of education in this area. As the largest archipelagic country in the world, which is located in the ring of fire, generally, Indonesia is prone to many catastrophic disasters such as volcanic eruptions and any other hydrometeorology disasters with the eastern part as the most vulnerable part for these disasters (Badan Nasional Penanggulangan Bencana, 2013). More development has taken place in the western part where the capital city is located, leaving the eastern part behind. This can be seen from the shortage of teachers in this area. From the survey of human resources quality census in Indonesia (Kemendikbud Pusat Data dan Statistik, 2016) shows that eastern Indonesia's provinces are from no. 17-34, and from those 17 provinces in the eastern area, there are 15 provinces that have a significant shortage of teachers. There are only 2 provinces in this area that have a surplus number of teachers. It is then not a surprise that this area always achieves lower than any other provinces in the western part for the National exam (UN) in the last 4 academic years (2014-2018) (Puspendik, 2018). With this disparity still taking place between these two regions, it can be said that equality is one of the aspects of the OECD principle that needs to be improved from Indonesia's education system.

On the other hand, there have been several great programs done by the Indonesian government in improving the equity of education such as the Indonesian Smart program (Program Indonesia Pintar - PIP); a financial aid for education given by the government for students from low-income families that helped more than 15 million students in 2015, or the Sekolah Gugus Depan (SGD) and Teachers in the front line program (Guru Garis Depan -GGD)/PPGT or SM3T. These programs aim to build more schools in rural areas and send young teachers to areas challenging access to education.

However, there should be some more sustainable ways to support these programs to run in the long term, provided that the government and their policies changed over time. This can be done through several strategies. Firstly, through regulations related to the endowment budgeting for educational programs for rural areas in eastern Indonesia. With a constant endowment from National Budgeting for these types of programs, a new government can continue these programs and hopefully improve them more in the future. Secondly, the government can improve the GGD system especially related to high teacher turnover. One of the concerns about the GGD program is the high attrition of the teachers sent in rural areas because they tend to stay for a short period of time. One possible way to tackle this issue is by selecting local teachers and sending them to their own area. By doing this, the attrition and cultural barrier issues will not be problems anymore because the teachers are from that particular area. Thirdly, the government can provide continuous training for teachers. Sending teachers to rural areas to tackle this equity issue is one thing but improving the quality of the teachers is another thing. That is why it is really important to make sure that teachers in any part of Indonesia have the same kind of training so that the quality of the teaching that the students have in the classroom is the same across the country. Hopefully, with constant monitoring and evaluation of these programs, the equity issue can be solved in the future.

#### **6.4. Efficiency (E)**

For the last eight years, Indonesia has mandated to allocate 20 percent of its national budgeting every year to the education sector (Badan Pendidikan dan Pelatihan Keuangan, 2014). As of 2018, the education sector is the third highest allocation of funding from National Budgeting (APBN Tahun 2018, 2018). Another good thing is for 2019, the government has dedicated an increasing amount of funding for education especially in improving the access and participation of education in rural areas (eastern Indonesia) in the hope that by 2019 all the schools in Indonesia would be able to implement the C13 across the country.

One of the strategies in improving access and participation is through Financial Aid for students who come from low-income families. This program is called the School Operational Fund (Bantuan Operasional Sekolah (BOS). This spending on the BOS program has increased over the years since its first implementation in 2005. According to World Bank (2010), this financial aid is

distributed directly to schools to help students and schools to cover operational costs and any related spending such as students' admission fees, school enrolment fees, uniform fees, textbooks, teaching-related fees, students' worksheets and other resources, computer fees, and other operational fees for students. By having these fees covered, it is expected that the implementation of C13 would be more effective and efficient especially for students in the rural area who come from low-income families as they do not have to cover the operational cost for schooling anymore.

However, there are several concerns and recommendations regarding the distribution of this funding of the BOS program. First, there should be an effective monitoring system of the distribution of this funding from national budgeting to each area. This is essential because this will not only assure the funding will go to cover what it should cover in each area but will also assure that there is no delay in the distribution of the funding as it is essential for the implementation of C13. Secondly, this funding may only be used in covering students' and schools' operational fees. Thus, it is not intended to fund teachers' salaries for it will reduce the total spending per pupil from this funding. According to World Bank (2010) in order to have a sustainable and effective impact of educational financial aid for students from a low-income family, the government needs to consolidate all types of financial aid based on demand-side measures and not only in smaller different types of programs. Lastly, according to the World Bank (2010), educational financial aid can also focus more on preparing high-qualified teachers through pre-service teacher training in university and in-service training at schools. With a good intention to prepare highly competitive students in the era of globalization in a highly efficient educational system, it will be possible if the teachers are better prepared through continuous training of C13 especially in the area of science and technology as mentioned in C13.

#### **7. Curriculum 2013, the National Examination (UN) and International Assessments**

It is hard to argue whether the implementation of curriculum 2013 correlates with Indonesia's International Assessments results' trends over the years. Some of the reasons include 1) lack of data available to investigate this particular correlation 2) The effect of implementing a reformation of a curriculum cannot be seen in only a short period of time especially in the context of Indonesia with more than 25 million students with various backgrounds, socio-economic statuses, races, and cultures. 3) There are some domains of content and topics tested in the International assessment like PISA and TIMSS that are not covered in the topics in Indonesia's Curriculum 2013. Almost half of the topics in grade VIII of C13 in Science and Math are not tested in TIMSS.

According to Erickson (2015), rankings and performance of an education system, we all should always note that overall country performance in these types of international assessments is one of many indicators of a highly effective

education system. Thus, if we want to examine education systems, it is necessary to look at multiple indicators such as school dropout rates, school climate, student and teacher behavior, students' perceptions of benefits of schooling and many other variables related to this issue before making any causal claim about them.

On the other side, it is interesting to see the trends in the National Examination (UN) results after the implementation of C13. In three different levels of education (Middle school, Senior High and Vocational Education), it is clear that the achievement of students in the UN is constantly declining from 2014-2018 (Puspendik, 2018). There are some possible factors contributing to this problem such as the fact that this C13 was not implemented nationally especially in most schools in rural areas, the readiness of the students, the changing format of the exams from paper-based to computer-based since 2016, the shortage of teachers, perception, and attitude of teachers toward constant changing of curriculums in the last decade and many more factors. Again, it is hard to make any claim without any proper investigation and research regarding this issue. However, one thing that is clear is that it is necessary to improve the implementation of C13 and focus more on enhancing students' achievement nationally than trying to focus more on being internationally competitive through the international assessments benchmark.

## 8. Conclusions and Recommendations

The implementation of C13 was initiated because of several factors such as the shortcomings within the previous curricula (KBK and KTSP), the intention to better prepare for Indonesia's golden era in 2020-2035 with the surplus of demographics. This noble intention of this C13 then should be accompanied by continuous monitoring and evaluation of the implementation of C13 itself by taking into account all the aforementioned possible constraints that hinder this C13 achieving its goal. One of the strategies is by focusing more on some dimension in the AQEE principle that is still lacking especially in the Equity and Quality of education. Having enrolled students at school and spending a lot of money on education are great but it would be better if all the other two dimensions on the AQEE can be improved as well. Improving the quality of teachers and making sure that the disparity of education among students is narrowing are the two unfinished tasks from Indonesia's education reform. Some sustainable programs addressing these two aspects are needed. Taking into account cultural context by involving more local people and leaders in composing the curriculum is also one of the possible ways to do this in the future.

Not only that, with more than five years of implementing C13, Indonesia's achievement trends in international assessment benchmark such as PISA or TIMSS are slightly increasing both in Math and Science even though it is still far behind if they are compared with that of neighboring countries in the ASEAN region. Yet, it is still hard to make any claim between the impact of C13 to this increasing achievement of students in those international benchmarks. On the other hand, public attention now shifts to the

declining results in the National Exam (UN) in Indonesia post-implementation of C13. Further and thorough research on this issue should be done in the future.

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