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Comparing the Indonesian Kurikulum 2013 with the Australian Curriculum: Focusing on science for junior secondary schools

Perbandingan Kurikulum 2013 Indonesia dengan Australian Curriculum: Dengan fokus pada Ilmu Pengetahuan Alam (IPA) pada tingkat Sekolah Menengah Pertama (SMP)

Michael Michie
Batchelor Institute of Indigenous Tertiary Education, Australia:
michael.michie@batchelor.edu.au

The introduction of a new curriculum in Indonesian schools seeks to bring about changes in Indonesian society as well as students' knowledge base. The curriculum is based on two layers of competencies: Core Competencies, and Basic Competencies. Core Competencies are applicable at all year levels and for all subjects. They include religious and social attitudes as well as knowledge, skills, and the application of knowledge. The Science Curriculum for junior high school is promoted as integrative science; some of the basic competencies demonstrate a cross-curriculum approach more successfully than others. When compared to the Australian Curriculum, the Science Curriculum reveals that the contents are similar, as are key ideas and skills, and each curriculum has its approach to assessing achievement. Sustainability is a major cross-curriculum feature of both curriculums. The introduction of Kurikulum 2013 has not been without controversy, with schools using the previous curriculum while Kurikulum 2013 undergoes further trialling.

Penerapan kurikulum baru untuk sekolah Indonesia tampak menghasilkan perubahan pada masyarakat Indonesia begitu juga pengetahuan peserta didik. Kurikulum bebasis pada dua jenjang kompetensi – Kompetensi Inti dan Kompetensi Dasar. Kompetensi Inti diterapkan untuk setiap kelas dan setiap mata pelajaran, serta meliputi kompetensi sikap spiritual, kompetensi sikap sosial, kompetensi pengetahuan, kompetensi keterampilan dan penerapan pengetahuan.

Kurikulum Ilmu Pengetahuan Alam (IPA) untuk Sekolah Menengah Pertama (SMP) dimajukan sebagai integrative science, dan pendekatan antar-kurikulum ditunjukkan untuk beberapa kompetensi dasar dengan lebih keberhasilan daripada kompetensi dasar lain.

Perbandingan untuk Australian Curriculum: Science [Kurikulum Australia: IPA] menyingkapkan beberapa persamaan dan perbedaan. Konten adalah kesamaan, juga ide pokok dan keterampilan, tetapi penilaian prestasi ditinjau secara berbeda pada setiap kurikulum. Keberlanjutan adalah prioritas antar-kurikulum pada kedua kurikulum.

Penerapan Kurikulum 2013 sudah controversial. Mendikbud yang baru mengizinkan sekolah menggunakan Kurikulum 2006 (KTSP), kurikulum lama, selama Kurikulum 2013 diuji lebih lanjut.

Keywords: Indonesian Kurikulum 2013; Australian Curriculum; integrative science; competencies; national curriculum

INTRODUCTION

Kurikulum 2013 is the latest curriculum released by the Ministry of Education and Culture of the Government of the Republic of Indonesia. The implementation of Kurikulum 2013 has been very controversial. This paper discusses several issues concerning the 2013 curriculum.

The paper begins by outlining the primary and secondary school education systems in Indonesia from the perspective of implementation. The paper then examines Kurikulum 2013 for its basis and competencies. The curriculum for science is examined in greater detail, especially as it pertains to the junior secondary level, and it is compared to the Australian Curriculum.

PRIMARY AND SECONDARY EDUCATION IN INDONESIA

Schools in Indonesia are divided into two groups, public schools and private schools. Public schools are those organised by the Government of the Republic of Indonesia (Pemerintah Negara Republik Indonesia (PNRI)), especially the Ministry of Education and Culture (Kementerian Pendidikan dan Kebudayaan, Kemendikbud). Many public schools are Islamic schools or *madrasah* that are financed by the Ministry of Religion (Kementerian Agama, Kemenag). The curriculum for all schools, both Kemendikbud schools and Kemenag schools, is arranged by Kemendikbud. Private schools can use the national curriculum or another authorised curriculum.

The education system in Indonesia has three formal levels of schooling, namely primary (Sekolah Dasar (SD), Years 1-6), junior secondary (Sekolah Menengah Pertama (SMP), Years 7-9) and senior secondary (Sekolah Menengah Atas (SMA), Years 10-12). Vocational schools (Sekolah Menengah Kejuruan (SMK), Years 10-12), that focus on several forms of vocational education, also exist at the third level.

In Indonesia, school education is compulsory for all students from Years 1 to 9, although there are students who do not go to school anymore because their families are too poor to afford tuition. According to Suharti (2013), about 81 percent of students completed primary school in teaching year 2007/2008, and 87 percent of students who started junior secondary in 2004/05 finished three years later. In 2013, Kemendikbud announced a compulsory learning program of 12 years, namely from Year 1 in SD to Year 12 in SMA (Natahadibrata, 2013).

KURIKULUM 2013

Dokumen Kurikulum 2013 (Kurikulum 2013) (Kemendikbud, 2012) was released during the second term of President Susilo Bambang Yudhoyono by the Minister of Education [Mendikbud], Mohammad Nuh, in 2012. This was introduced to all schools in Indonesia to start in July 2013 at certain levels. In 2013, three documents for each level of education, which, together, were called *Kompetensi Dasar (Basic Competencies)* were published by Kemendikbud (2013a; b; c). Kurikulum 2013 replaces a previous curriculum, Kurikulum Tingkat Satuan Pendidikan (KTSP), also known as Kurikulum 2006, which was also competency-based.

Kurikulum 2013 includes the background, basis and principles for development of the curriculum, and the structure for its implementation. Information regarding the background includes the legal, philosophical, theoretical and empirical basis (Kemendikbud, 2012).

Legal basis

According to the *1945 Constitution* and Pancasila,[1] the PNRI is responsible for the development of education regarding the needs of society. *Law 20 of 2003* concerning the National Education System states that the PNRI is responsible for educational policy, curriculum and national educational standards (Al-Samarrai & Cerdan-Infantes, 2013). Kemendikbud is the agency of the PNRI that is responsible for organising primary and secondary education, and it prepares curriculum documents for use in schools throughout Indonesia.

Philosophical basis

The connection between education, culture and religion is very strong in these Indonesian curriculum documents. The function of education is to develop students to become good citizens. According to *Law 20 of 2003*, students "become religious and pious humans to the one and only great God, of noble character, healthy, knowledgeable, skilful, creative, independent, and become democratic and responsible citizens" (Kemendikbud, 2012, p. 3). This statement is repeated in the curriculum documents and various commentaries (e.g., Nuh, 2013; Prihantoro, 2015). The intent is that people should also influence education: "Education is rooted in the people's culture" (Kemendikbud, 2012, p. 3).

Theoretical basis

Kurikulum 2013 is based on two educational ideas: competencies and educational standards. Before the Kurikulum 2013 documents were written, there were pre-existing documents: the *Graduate Competency Standards* and *Content Standards*. Both are referred to in Kurikulum 2013. These standards documents were developed by the Board of National Education Standards for Kemendikbud. According to Kemendikbud (2012, p. 5), "Competencies are the ability of someone to display attitudes, use knowledge and skills to carry out a task in school, society and environment where they interact."

[1] Pancasila is the five guiding principles of the Indonesian state; education relates to the principle of social justice.

Kurikulum 2013 is a program for students to experience wide learning opportunities in attitudes, knowledge and skills to develop their abilities.

Kurikulum 2013 highlights two types of competencies: Core Competencies and Basic Competencies. Core Competencies are the main competencies used throughout the curriculum documents. They are: spiritual attitudes, social attitudes, knowledge, and skills (Nuh, 2013). The text of the Core Competencies develops through all levels. Basic Competencies are different and developed at each level and between subjects. Basic Competencies include all knowledge and skills that must be taught in each subject at each level. All Core Competencies and Basic Competencies are described for each subject and level in *Kompetensi Dasar* (Kemendikbud, 2013a; b; c). Kurikulum 2013 is not the first Indonesian curriculum to use competencies as the basis of the curriculum; competencies were also used in Kurikulum Berbasis Kompetensi (KBK, or Kurikulum 2004) and Kurikulum Tingkat Satuan Pendidikan (KTSP, or Kurikulum 2006). Kurikulum 2006 was a school-based curriculum (Prihantoro, 2015).

Graduate Competency Standards are minimum standards students must achieve to graduate from primary, junior secondary, senior secondary, or vocational school. Graduate Competency Standards include attitudes, knowledge, and skills (Kemendikbud, 2012). Each unit contains three components: minimal process ability, content, and range of use of the process and content components. Content Standards are the range of minimal materials to reach the Graduate Competency Standards. They are also arranged by subjects and levels of schooling.

Empirical basis

Factors that do not have links to the competencies are included in Kurikulum 2013 as having an empirical basis for inclusion. As noted in Kurikulum 2013, the Indonesian economy continues to grow and students need training to become new entrepreneurs. The Kurikulum also encourages students to become well-integrated Indonesian citizens, learning to end disputes rationally and not with violence. Kurikulum 2013 specifies the need for a focus at the primary school level to increase three basic abilities: reading, writing, and counting, as well as character formation. Outcomes of studies of PISA and TIMSS results indicate the need for students to focus not only on content but also other essential abilities. Students also need to know something about the challenges to the Indonesian environment, such as pollution, sources of clean water, potential food biosecurity, and global warming.

Structure of the curriculum

The curriculum is divided into three parts, primary school (Years 1-6), junior secondary school (Years 7-9) and senior school (Years 10-12). The structure of the curriculum at each level is similar and discussed in *Dokumen Kurikulum 2013* and *Kompetensi Dasar* for each level. In primary and junior secondary, subjects are classified into two groups and all subjects are compulsory; Table 1 (Kemendikbud, 2012) lists the subjects for primary and junior secondary school. Other, extra-curricular activities are also suggested, for example joining Scouts (which is compulsory in junior secondary), the school council, the health unit and Youth Red Cross.

Table 1: Subjects for primary and junior secondary levels according to Kemendikbud (2012).

	primary school	**Junior secondary school**
Group A: subjects that are more oriented towards the intellectual and affective aspects	1. Religious education 2. Pancasila and civics education 3. Indonesian 4. Mathematics (5. Science) (6. Social science)	1. Religious education 2. Pancasila and civics education 3. Indonesian 4. Mathematics 5. Science 6. Social science 7. English
Group B: subjects that are more oriented towards the affective and psychomotor aspects (includes local content)	1. Cultural arts and skills 2. Physical education, sport and health	1. Cultural arts and skills 2. Physical education, sport and health 3. Vocational subjects

The curriculum for primary school stipulates that Science and Social Science should not be taught as separate subjects; their content "is integrated in the subjects Pancasila and civics education, Indonesian and Mathematics" (Kemendikbud, 2012, p. 14). Because of this, a thematic approach is suggested when competencies for two subjects are similar. Examples of various themes are listed in the appendix of Kemendikbud, (2013a).

The description of the Indonesian curriculum for junior secondary can be found in *Kompetensi Dasar SMP* (Kemendikbud, 2013b). This document includes information on the curriculum structure and study load, and the organisation of basic competencies for each subject, including Core Competencies for junior secondary with Basic Competencies for the Science subject. In senior secondary, subjects are split into two groups: the compulsory and elective. Many subjects from junior secondary are still compulsory (but not Science or Social Science) and students can choose elective subjects (e.g., Mathematics and Science Electives include Mathematics, Biology, Physics, and Chemistry). The curriculum also includes the time allocation for teaching per week for students at all levels and the duration of one teaching period.

THE AUSTRALIAN CURRICULUM

In Australia, state and territory governments are responsible for primary and secondary school education, and for preparing the curriculum. However, the need to prepare a national school curriculum was agreed to by all state and territory governments in 2008. The Australian Curriculum, Assessment and Reporting Authority (ACARA) was created by the Australian Parliament with the enactment of the *ACARA Act (2008)* (ACARA, 2012). One of the functions of ACARA is to prepare the national school curriculum with content and achievement standards (i.e., the Australian Curriculum). ACARA also works to include other strategic directions as identified in the Melbourne Declaration (MCEETYA, 2008).

Philosophically, "the Australian Curriculum is designed to develop successful learners, confident and creative individuals, and active and informed citizens" (ACARA, 2016). The philosophical basis of the Australian Curriculum is stated in the goals of the Melbourne Declaration (MCEETYA, 2008).

ACARA (2016) specifies the structure of the Australian Curriculum as the same for the eight learning areas (subjects): English, Mathematics, Science, Health and Physical Education, Humanities and Social Sciences, The Arts, Technologies, and Languages. The structure of the curriculum documents is the same for Foundation to Year 10 (primary to junior secondary); the structure is different for Years 11 and 12 (senior secondary). The Foundation-Year 10 curriculum develops knowledge, skills and understandings of the subjects; general abilities; and cross-curriculum priorities:

- General abilities are an integrated and inter-connected group of knowledge, skills, behaviours and dispositions that are applied between all subjects: Literacy; Numeracy, Information and Communication Technology Capability; Critical and Creative Thinking; Personal and Social Capability; Ethical Understanding; and Intercultural Understanding.
- Three cross-curriculum priorities will be developed through relevant subjects: Aboriginal and Torres Strait Islander Histories and Cultures; Asia and Australia's Engagement with Asia; and Sustainability.
- Achievement standards and content descriptions are important elements of the learning areas (subjects) in the curriculum.
- Achievement standards for each subject describe the learning by students for each year level. The focus of the achievement standards is to develop a teaching-learning program by the teacher. Teachers can supervise the learning of students and assess the progress and achievement of students with the use of work samples.
- Content descriptions describe the content that is to be taught by teachers and learnt by students. Content description includes the knowledge, understandings and skills for each year level. There are also elaborations in the choice of content for the teacher to decide which one is to be used for teaching.

Structural consistency throughout the curriculum is ensured by the division of subject areas into subjects, strands, sub-strands, and threads presented as learning sequences across the years of schooling. This structure will now be examined in the context of the science curriculum.

COMPARISON OF KURIKULUM 2013 WITH THE AUSTRALIAN CURRICULUM

The Indonesian Kurikulum 2013 and the Australian Curriculum are two modern curriculums but they have different approaches. *Dokumen Kurikulum 2013* is written with much detail, including the basis and developmental principles founded in educational theory. At this level, the Australian Curriculum does not have as much detail as Kurikulum 2013. Both curriculums are developed around common frameworks. The framework for Kurikulum 2013 makes use of core competencies between subjects and levels of schooling. The Australian Curriculum is also developed according to a framework but this only becomes obvious when comparing the various subject-level documents, because they are not produced together. Some subjects have not yet been developed by ACARA and schools make use of the existing documents developed by

each educational authority. The main difference between Kurikulum 2013 and the Australian Curriculum is the use of competencies, especially the Core Competencies. There are four competencies which can be summarised as the spiritual attitudes competency, social attitudes competency, knowledge competency and skills competency (Nuh, 2013).

- The first Core Competency of Kurikulum 2013 refers to the religious doctrines that are practised by Indonesian students. This is not included in the Australian Curriculum.
- The second Core Competency is the social attitude competency and refers to the bases of Indonesian culture (e.g., *gotong royong*[2]), especially as they relate to society and the existence of students. In the Australian Curriculum there are general abilities that relate to the lives of students as learners.
- The third and fourth Core Competencies are about the knowledge and skills for each subject. They have the same function as the content descriptions in the Australian Curriculum where they are not written as competencies.

The next layer of documentation of Kurikulum 2013 is the documents entitled *Kompetensi Dasar* for primary, junior secondary and senior secondary schools (Kemendikbud, 2013a; b; c). The Basic Competencies for each subject and year are contained in these documents. The content for each subject is expressed as competencies that must be attained by the students. In the Australian curriculum there are also documents for each subject for Foundation-Year 10, for example the *Australian Curriculum: Science* (*ACS*) (ACARA, 2015). However, the curriculum content is written as content descriptions and elaborations, not as competencies or outcomes. The structure of *ACS* will be described below.

The Graduate Competency Standards in Kurikulum 2013 are the minimum levels students must attain to graduate from primary, junior secondary, or senior secondary school. In the *ACS*, achievement standards for students are described for each subject for each year level but they are not used to determine if students graduate from primary or junior secondary school. Kurikulum 2013 does not contain features that resemble cross-curriculum priorities to be developed through the subjects as in the ACS. Sustainability is included in the science curriculum of Kurikulum 2013, although the curriculum wording is: "the development of attitudes of concern and responsibility regarding the social and natural environment" in science and social science (Kemendikbud, 2013, p. 2). Sustainability is considered by Prihantoro (2015) as integral to environmental education to be taught across the curriculum in each subject but particularly in science and social science.

In the Australian Curriculum for senior secondary classes, the structure of the subjects resembles the structure for subjects in primary and junior secondary. There are also more subjects. For example, in the science area there are four subjects: Biology, Physics, Chemistry, and Earth and Environmental Science. As of the date of writing this paper, the curriculum for all senior secondary subjects has not yet been written by ACARA for the Australian Curriculum.

[2] Mutual assistance

Kurikulum 2013 and Ilmu Pengetahuan Alam (IPA, Science)

Kurikulum 2013 proposes three approaches to teaching IPA (science) at each level of schooling. In primary school, science is to be taught as an integrated subject with Pancasila and Civics Education, Indonesian and Mathematics. In junior secondary school, IPA "is developed as the subject *integrative science* . . . not as the science disciplines" (Kemendikbud, 2013b, p. 2).[3] In senior secondary school, three elective subjects are offered: Biology, Physics and Chemistry.

Integrative science for junior secondary

There is not much written about *integrative science* in the document *Kompetensi Dasar SMP* (Kemendikbud, 2013b), and not all of the Basic Competencies demonstrate integration. In 3.9, quoted below, for example, content comes through knowledge of electricity from the Physics discipline and knowledge of the human body from the Biology discipline.

> 3.9 Recognise the concept of static electricity, electrical potential, electrical conductors, electricity in the nervous system, electricity in the heart, electricity in the skeleton, and animals that contain electricity (Year 8, Kemendikbud, 2013b, p. 52)

Use of the term 'integrative' is unusual, particularly in the sense of integrative science rather than integrated science. Integrated science is generally used to imply that the content of the course comes from across the disciplines, as demonstrated above. Integrative science has been used elsewhere[4] to imply inclusion of social and cultural (including cross-cultural) aspects as well as scientific understandings. From this perspective the whole of Kurikulum 2013 may be considered as integrative because Core Competencies 1 and 2 throughout refer to the religious, social and cultural basis of education in Indonesia.

A teacher's guidebook is published by Kemendikbud for each year of IPA in junior secondary. Each guidebook (e.g., Kemendikbud, 2014) serves two functions. The first function is about teaching, learning, and assessing IPA as well as Assessment of Core Competencies 1 and 2. The second function identifies science teaching strategies for each year level by using the student book.

Australian Curriculum: Science and comparison with IPA in Kurikulum 2013

Roberts (cited in Fensham, 2016) believes two visions underpin scientific literacy, which can be enacted through different approaches to the curriculum:

- In Vision 1 the scientific disciplines are seen as the source of school science. This vision is typical of most curriculums to date.
- Vision 2 considers real world contexts involving science and technology as the primary source of school science.

[3] As with other extracts from Kemendikbud publications, this was originally written in Indonesian, but the term 'integrative science' is written in English.

[4] For example, the Institute for Integrative Science and Health, www.integrativescience.ca/

Fensham (2016) states that the Australian Curriculum: Science adheres to the Vision 1 axiom, although the advisory group attempted to use the Vision 2 axiom to determine the content of the Science understanding strand. In science in Kurikulum 2013, the Indonesian writers have, perhaps inadvertently, made some inroads into Vision 2 considerations by attempting to include integrative science and real world contexts in the junior secondary curriculum. This initiative is not supported in the senior school science curriculum which reverts back to being discipline-based.

Several features appear in the ACS that do not appear in Kurikulum 2013, such as an overview including rationale, aims, and key ideas. ACARA (2015) states that there are six key ideas in the science curriculum: patterns, order and organisation; form and function; stability and change; scale and measurement; matter and energy; and systems. The IPA has four major themes (Kemendikbud, 2014): materials, systems, change, and interactions. These two sets of ideas are somewhat similar. ACS has three interrelated strands: science understandings, science as a human endeavour, and Science inquiry skills, although the ACS suggests that these three strands should be taught with the integrated method, similar to Kurikulum 2013. Science understanding is further divided according to disciplines: biological science, chemical science, physical science, and Earth and space science, Science understandings are similar to Core Competency 3 in Kurikulum 2013, which concerns knowledge, and science inquiry skills are similar to Core Competency 4, which concerns skills. There is a description in ACS for each year of Foundation to Year 10 about content that is to be taught, content descriptions and elaborations, and the achievement standards for each year.

Many topics are the same for the Indonesian and Australian junior secondary science curriculum; although the names of the topics are not the same and may not include the same skills or applications of the knowledge. There is more emphasis on Earth and space science in ACS than in Kurikulum 2013 whereas more emphasis is given to human body systems in Kurikulum 2013 than in ACS. Also there are several topics from Kurikulum 2013 that are not yet included in the students' text books.

KURIKULUM 2013: A HISTORY OF CONTROVERSY

Kurikulum 2013 was launched in the second term of President Susilo Bambang Yudhoyono by the Minister for National Education and Culture, Mohammad Nuh, with encouragement from Vice-President Boediono, in December 2012. In October 2014, Joko Widodo was elected as the new president, and he appointed Anies Baswedan[5] as Minister for Education and Culture. In December 2014 Minister Baswedan ordered that:

> Units of primary and secondary education that have implemented Kurikulum 2013 since first semester of school year 2014/2015 are to return to implementing Kurikulum 2006 starting from second semester of year 2014/2015 until there is a regulation from the Ministry of Education and Culture about implementation of Kurikulum 2013. (Section 1, Regulation of the Ministry of Education and Culture of the Republic of Indonesia, Number 160 of 2014)

The regulation also states:

[5] Anies Baswedan was replaced by Muhadjir Effendy in July 2016.

> Units of primary and secondary education that have already implemented Kurikulum 2013 for three semesters are to continue implementing Kurikulum 2013. (Section 2, Regulation of the Ministry of Education and Culture of the Republic of Indonesia, Number 160 of 2014)

According to Baswedan, the main reason for the change in policy was incompatibility between the goals of the curriculum with the textbooks, as well as a lack of readiness of schools and teachers (Budiari, 2014). Baswedan also said that 6,221 schools could continue with Kurikulum 2013 and be trial schools for the implementation of that curriculum. "They can become examples for schools that are not yet ready," said Baswedan ("Mulai semester genap", 2014). More than 200,000 schools would revert to Kurikulum 2006.

In an interview for *Tempo English* ("Anies Baswedan", 2014, p. 78), several comments were made by Baswedan about the implementation of Kurikulum 2013: "In principle, curriculum must go through changes"; "The curriculum itself is good. The main problem is the hurried implementation." Baswedan believed that implementation of the curriculum should occur over seven years. According to Ministerial Regulation No. 160 of 2014, schools "can implement Kurikulum 2006 until teaching year 2019/2020" (Paragraph 4). "Professor John", who was on the Kurikulum 2013 advisory board, said "the government believed that curriculum should be revised or changed in 5 to 10 years" (Ramli, 2014, p. 82), and "in my opinion if the new Minister wants to introduce a new curriculum he should prepare it within 3-4 years" (Ramli, 2014 p. 86). The ability of teachers to teach according to the new pedagogy of Kurikulum 2013 has also been questioned. Minister Baswedan said:

> So, those who need to be trained to implement that curriculum are not just the teachers, but the school's entire ecosystem . . . We are preparing a number of schools as models. Then we bring teachers from other schools to teach in those schools for a certain period. They will see directly how the curriculum is being properly applied . . . Those schools [the 6221 mentioned before] will be test cases and models, training places for teachers. ("Anies Baswedan", 2014, p. 80)

So the Minister has a plan to improve the skills of teachers. Teachers have been improving their qualifications, but more training is needed for primary school teachers and to create good skills in all areas of the country (Suharti, 2013). Bjork (2013) believes that many Indonesian teachers think of themselves as government servants, not educators. Professional development has not yet been achieved for teachers in Indonesia, especially in poor and remote areas. In January 2016, Baswedan said that competency assessments of teachers showed that the government had already successfully trained 2.9 million teachers (Nugroho, 2016), which enables approximately 25 percent of schools to implement Kurikulum 2013 from 2016.

Another important problem facing the Indonesian school system is the availability of textbooks which are compatible with the new curriculum's objectives. In Indonesia, the Ministry of Education and Culture is responsible for the preparation of the new textbooks for Kurikulum 2013. Many new textbooks had been printed before the Minister stopped the use of the curriculum in 2014.

> Revision of the books . . . was based on improvements from experts and society that were completed at the end of October 2015 . . . He mentioned that they revised as many as 377 books and confirmed they would be finished in February 2016.

> Hopefully, these books can be used in school year 2016/2017. ("Kemdikbud revisi", 2016)

Several textbooks had been extensively revised, especially to incorporate changes to the themes for primary school in Years 1 to 6. There were other reasons, too, which are not examined in detail in this paper, which caused delays in the implementation of Kurikulum 2013, including:

- Too much work for the students
- Few teaching resources in many schools, especially those in poor or remote areas. Many Indonesian schools do not yet have online connections to the Internet. In fact, some schools do not even have electricity.
- The philosophy was too similar to the Islamic religion, especially in connection with Core Competency 1.

Concerns about the science curriculum

Ramli (2014) highlights several problems with the science content and pedagogy in primary school and junior secondary.

- In primary school, Kurikulum 2013 provides for no science or social science content in Years 1-3, and in Years 4-6 teachers are expected to teach science in an integrated way with the Indonesian Language. There is a list of themes in Kemendikbud (2013a) but not all themes have science content.
- In junior secondary school, teachers are expected to teach *integrative science*, but they have no training to do so.
- Researchers think that the science content has been reduced and the consequence will be that student performance in TIMSS and PISA will not be improved.
- Lack of scientific literacy has been highlighted as a potential problem that will affect the development of Indonesia.

Concerns about the Australian Curriculum

Kurikulum 2013 is not the only curriculum to cause controversy. In 2014, the new conservative government ordered a review of the Australian Curriculum (Review of the Australian Curriculum, 2014). One finding was that the Australian Curriculum had too much content, including content targeting general abilities and cross-curriculum priorities. One issue highlighted in the report that resonates with Kurikulum 2013 is the need to incorporate a moral dimension to the Australian Curriculum; that is, it contains cross-curriculum priorities about Asia and Indigenous Australians but not enough attention to "the impact of Western civilisation and Judeo-Christianity on Australia's development, institutions and broader society and culture" (Review of the Australian Curriculum, 2014, p. 5). These issues were considered important to enable students to understand the spiritual and moral dimensions of Australian life. These dimensions are included in Kurikulum 2013 (e.g., Core Competencies 1 and 2).

CONCLUSION

A new curriculum called Kurikulum 2013 was introduced to all Indonesian schools in 2013. The same curriculum framework was used throughout Kurikulum 2013 for all subjects for all year levels. Kurikulum 2013 is based on two levels of competencies: Core

Competencies and Basic Competencies. There are four Core Competencies for all subjects and all year levels. Those Core Competencies are similar and evolve through the curriculum between years. Core Competency 1 refers to the religious doctrine followed by Indonesian students. Core Competency 2 is competency of social attitudes and shows attitudes of Indonesian culture that are especially related to the society and experience of students. Core competence 3 and Core Competency 4 are about the special knowledge and skills of each subject. Basic Competencies change according to the subject and year level. Many Basic Competencies relate to two other documents: *Standard Graduate Competencies* and the *Content Standards*.

The teaching of Ilmu Pengetahuan Alam (science) in Kurikulum 2013 varies according to the level of school. In primary school, in Years 1-3 there is no science content in the curriculum, and in Years 4-6 teachers are expected to teach science integrated with other subjects, rather than as a separate subject. In junior secondary, the teacher is expected to teach, as a discipline, integrative science. In senior secondary there are three subjects: Biology, Chemistry and Physics. Science content at junior secondary level in Kurikulum 2013 and its pedagogy are similar to those prescribed in the Australian Curriculum: Science is at the same level. In December 2014, use of Kurikulum 2013 was withdrawn by the Minister of Education for most schools. This curriculum underwent improvement and, by mid-year 2016, it was back in use by 25 percent of schools in Indonesia.

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Indonesian abbreviations

	Indonesian	***English***
IPA	Ilmu Pengetahuan Alam	*Science*
IPS	Ilmu Pengetahuan Sosial	*Social education*
KBK	Kurikulum Berbasis Kompetensi, Kurikulum 2004	*Competency-Based Curriculum, Curriculum 2004*
Kemenag	Kementerian Agama	*Ministry of Religion*
Kemendikbud	Kementerian Pendidikan dan Kebudayaan	*Ministry of Education and Culture*
KTSP	Kurikulum Tingkat Satuan Pendidikan, Kurikulum 2006	*Curriculum 2006*
Mendikbud	Menteri Pendidikan dan Kebudayaan	*Minister of Education and Culture*
PNRI	Pemerintah Negara Republik Indonesia	*Government of the Republic of Indonesia*
PPKn	Pendidikan Pancasila dan Kewarganegaraan	*Civics and Citizenship*
SD	Sekolah Dasar	*Primary School*
SMA	Sekolah Menengah Atas	*Senior High School*
SMK	Sekolah Menengah Kejuruan	*Vocational High School*
SMP	Sekolah Menengah Pertama	*Junior High School*

Note: The author accepts responsibility for the majority of translations from Indonesian used in this paper and apologises for any misinterpretations he had made.