

Summary of Workshop on Fusion of OBOR Civilizations School Curriculum Design 11-15 December 2017 Kuala Lumpur

1.0 Introduction

The Inter-Academy Partnership (IAP) is the umbrella body of about 110 national academies of sciences and the current chairman of the Inter-Academy Partnership Science Education Programme (IAP SEP) Global Council is Dato' Ir. (Dr.) Lee Yee Cheong with the Academy of Sciences Malaysia as the Lead Academy. The main focus of IAP SEP is Inquiry-Based Science Education and Science Communication and the Fusion of OBOR Civilisations School Curriculum Design is its current priority project.

The project arose out of the need to inculcate peace and harmony through evidence based science education for children in the light of the current conflict and increase in violence in societies, and terrorism resulting in atrocities and displaces persons.



There is a need to develop a curriculum on the fusion of civilisations highlighting the discoveries and contributions of culture, trade, science and technology from each civilization and their beneficial impacts on other civilizations through the land and oceanic silk roads. It will hopefully instill respect amongst the young and promote tolerance, understanding and respect for one another's culture and tradition.

Two IAP SEP Forums were held earlier to discuss the concept amongst S&T historians and curriculum designers in Khartoum Sudan, February 2017 and Beijing, China July 2017. This workshop assembled a working group of curriculum designers and science communicators to get down to work on the school curriculum. The participants were as follows:

1. Dato' Ir. (Dr.) Lee Yee Cheong, IAP SEP Global Council Chair.
2. Prof. Ye Zhaoning, Associate Professor, Research Center for Learning Science, Southeast University, Nanjin, Jiangsu Province, China.
3. Dr. Chen Wei, Assistant Researcher, Institute for the History and Natural Sciences, Chinese Academy of Sciences, Beijing, China.
4. Dr. Tasneem Anwar, Assistant Professor, Science Education, Lead Faculty, Virtual Learning Environment (VLE) The Aga Khan University, Institute for Educational Development, Pakistan.
5. Dr. Indarjani, Deputy Director for Programme, SEAMEO Regional Center for QITEP in Science, Bandung, Indonesia.
6. Dr. Aphiya Hathayatham, Vice-President, National Science Museum, Thailand.
7. Datin Seri Norzamani Abdol, Deputy Director, School Management Division, history curriculum expert and former head of History, Curriculum Development Division, Ministry of Education Malaysia.
8. Mrs. Zainon Abd Majid, Head of Science Unit, Curriculum Development Division, Ministry of Education Malaysia and science curriculum expert.
9. Mrs. Salbiah Mohd Som, Senior Lecturer, Selangor Matriculation College, science curriculum expert and former science officer Curriculum Management Division.
10. Datin Maharom Mahmood, former Head of History & Local Studies Unit, Curriculum Development Division and history curriculum expert (retired).

To recapitulate, education plays a key role in producing citizens of today for tomorrow. Various subjects are introduced into the education program to ensure that major educational goals such as being able to problem-solve and think critically, be creative, care and want to give back to their community, persevere, have integrity and self-respect, have moral courage and be able to use the world around them well.

The idea of implementing the fusion of civilization curriculum in the existing educational program has been debated since lately. It has been thought and believed as the new approach to promote world peace and harmonious human life among students from young age. By understanding and having good perception of different civilizations that contribute to present day knowledge, children will appreciate the need and importance to live in peace and harmony. Based on this premise Fusion of Civilization Education (FoCEd) Curriculum has been formulated and develop to address and fulfil the needs.

FOCEd curriculum is formulated in line with thinking that connectivity of discoveries in each civilization along the Belt and Road (B&R) Initiative and how such discoveries influence the cultures and civilizations for the betterment of human condition along the B&R countries and regions. Understanding the connectivity between neighboring cultures and civilizations among children could be an approach to instill the awareness of the importance of living in peace and harmony. The content of the curriculum also include the role of the great travellers along the B&R that helped to spread the fusion of B&R civilizations.

2.0 Background and Rationale

2.1 Background

The InterAcademy Partnership (IAP) for Science Education Program (SEP) Fusion of One Belt One Road Civilizations Curriculum Design” project is inspired by two La Main a la pate (LAMAP) thematic programs, namely “Discoveries in Muslim Countries” based on the ground-breaking discoveries in the Golden Age of Islam; and “Discoveries in European Countries” that resulted from the European Renaissance with knowledge and technology transfer from Islam. Through the ancient Silk Road, Islamic discoveries interacted eastwards with the civilizations in India and China.

The “Fusion of OBOR Civilizations Curriculum Design” project is given modern relevance by China’s “One Belt One Road” (OBOR) Initiative that aims to uplift the human conditions of the developing world by physical, cyber and cultural connectivity.

This IAP SEP project anchors itself on the tenets of the Islamic Golden Age:

- Seek and share knowledge freely throughout the world;
- Be knowledgeable not only in science, but also in religion, poetry, literature, music and the arts.

2.2 Rational

2.2.1 Science, technology, engineering and mathematics (STEM) education have been recognized as the vehicle to enhance the inborn curiosity and creative instincts of children to face the rapid pace of development in Industry 4.0 and the global digital economy. Thus stressing and promoting the importance STEM education especially the evidence based or inquiry based science education (IBSE) methodology has been given more emphasized in educational program of many countries.

2.2.1 Enhancement of STEM human capital has greatly improved the human condition in recent decades; it has also tremendously increased the killing power of traditional weapons as well as the chilling military hardware in cyber warfare. Hence, wars and conflicts have grown more destructive.

2.2.2 The increased of destruction of the world and humanity demands big shift of priorities in education. Education must prioritize world peace and harmony hand in hand with STEM for sustainable development. Education for peace and harmony may well succeed with the young.

2.2.3 Children are not only born inquisitive but also benign. In this internet and digital age, children are much more adept in acquiring and sharing information knowledge through social media. In turn, they can spread the message of peace and harmony to their parents and their communities. Indeed, they can be really agents of societal change for peace and harmony.

3.0 Definitions

3.1 Civilization

The level of developments at which people live together in peacefully in communities.

3.2 Fusion of Civilization (FoC)

FoC is connection of different civilizations that contribute to present day knowledge and bring global peace and harmony.

3.3 FoC Education (FoCEd)

FoCEd is process of teaching, facilitating learning and acquisition of knowledge, skills, values, beliefs and habits that related to fusion of civilizations.

3.4 FoCEd Curriculum

FoCEd Curriculum is a set of plan and arrangement concerning the purpose, content and learning materials and how to use as a guide for learning activities to achieve specific aims of FoCEd.

4.0 Conceptual Framework of FoCEd

4.1 Aims and Objectives:

4.1.1 Aim

FoCEd aims to **promote** tolerance and respect of other cultures and traditions through **understanding** of current **scientific knowledge and discoveries driven from ancient wisdom to inculcate** global peace and harmony.

4.1.2 Objectives:

The objectives of FoCEd are to enable students:

- i. To identify the knowledge and scientific process as the common way to solve problems.
- ii. To describe development and connection between the early inventions to present day innovations.
- iii. To appreciate the contribution of discoveries from various civilizations.
- iv. To demonstrate teamwork for promoting peace and harmony.

4.2 Element of Content Areas

4.2.1 FoCEd Curriculum framework includes Big Idea, Concept, Competency, Connectivity. However, Level and Standard should be determined by countries themselves to plan, adopt and adapt FoCEd framework and materials.

Big Idea: Declarative statements that describe main concepts that transcend grade levels. Big Ideas are essential to provide focus on specific science and technology content for students. The two big ideas, as evidenced the Belt and Road Initiative, are:

- Water
- Land

Concept: Describe what students should acquire i.e. knowledge, skills, values, beliefs and habits-that related to fusion of civilizations under each Big Idea as a result of teaching and learning specific to grade level.

Connectivity: Describe the **link among civilizations** that contribute to present day knowledge to bring about the acceptance of differences for peace and harmony. The civilizations include **ancient discoveries** and **inventors** of civilizations along Belt and Road countries that contribute to the present innovations.

Competency: Describe what students should be able to know, to do and to perceive the fusion of civilizations as a result of the instruction, specific to grade level.

4.2.2 The Framework

Big Idea	Concept	Connectivity	Competency	Level & Standard
Exploring the world through maritime	<ul style="list-style-type: none"> • Knowledge (sc & tech, astronomy, culture, language) • Values, beliefs and habit: Support (power, funds and manpower); Offering (protection, goods, relationship, harmony), religion/ethical values, overcoming the problem during travelling. 	<ul style="list-style-type: none"> • Discovery: astrolabe -Inventor : hellenistic civilization (Roman and Greek) 220 B.C -improved by Islamic astronomer (Mohamad Al Fazari lived in 8th century) to find the qiblah for praying • Suggested activity: Making compas 	Students appreciate the diversity of civilizations <ul style="list-style-type: none"> • Critical thinking -Comparing and contrasting • Communication -Describe. • Collaboration • Creativity -develop and design 	To be filled up by the respective countries
Exploring the world through land	<ul style="list-style-type: none"> • Knowledge (sc & tech, astronomy, culture, language) • Values, beliefs and habit: Support (power, funds and manpower); 	<ul style="list-style-type: none"> • Discovery- Karez/Qanat (underground water ways) -Inventor:Persians (Iran) (Originated in Iran 3000 yrs ago) 	Students appreciate the diversity of civilizations <ul style="list-style-type: none"> • Critical thinking -Comparing and contrasting • Communication -Describe.. 	

	Offering (protection, goods, relationship, harmony), religion/ethical values, overcoming the problem during travelling	-Spread from there slowly westward and eastward -Practised in many countries until now • Suggested activity: Making-water pump, -wind mill, -water mill (different ways to manage water)	<ul style="list-style-type: none"> • Collaboration • Creativity -develop and design	
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5.0 Teaching and Learning

5.1 Suggested T&L Approach

To implement the concept of FOC in the T&L practice it is suggested to refer the great travellers Ibn Battuta, from Morocco and Admiral Zheng He (Admiral Cheng Ho) from China. They have been identified as the iconic figures that portrayed the connectivity among civilizations. FoCEd concept may be delivered in classroom through story telling of the two great travellers, Ibn Battuta and Admiral Zheng He.

The story telling will lead to the class activities with emphasize on student centered orientation by employing these approaches:

- Inquiry learning/discovery learning
- Problem based learning
- Project based learning
- Contextual learning

5.2 FoCEd teaching and learning may cater the 21st century skills that are required to thrive in the future. The skills are:

- Critical thinking
- Communication
- Collaboration
- Creativity

5.3 Suggested Teaching and Learning Resources

Educators are encouraged to develop by adapting and adopting teaching and learning materials based on the travel of Ibn Battuta and Admiral Zheng He in the implementation of FoCED.

The table below summarized the period and various places visited by them along the Belt and Road countries.

	Ibn Battuta (1325-1354)	Zheng He (1405-1433)
1.	Sri Lanka, Straits of Malacca , Malaysia (Malacca), Indonesia, (Samudra/Sumatra/Pasai), Vietnam	
2.	China (Guang Zhou, Fujian, Hang Zhou, Beijing)	
3.	India (Calicut)	
4.	Maldives	
5.	Middle East (<u>Makkah</u>)	Middle East (<u>Makkah</u> , Aden, Djofar)
6.	Africa (Timbuktu)	Africa (Mogadishu, Barawe, Zanzibar, Mombhasa)
7.	Morocco (Marakesh, Fez, Tangiers)	-
8.	India (Delhi)	India (Calicut, Cochine)
9.	Central Asia (Baghdad, Damascus, Persia, Uzbekistan, Bukhara, Afganistan, Samarkhan)	-
10.	Asia Minor (Anatolia, Constantinople)	-
11.	Europa (Granada, Spain, Valencia, Cordoba, Venice)	

Some recommended resources are:

- Ibn Battuta: The Man Who Walked Across the World (Documentary)
- Chinese Treasure Fleet Adventure of Zheng He (Documentary)
- The Travel of Ibn Battuta UC Berkeley (time line of Ibn Battuta travels and students activities)
- The existing school curriculum that is relevance to the fusion of civilizations concept
- LAMAP/ISTIC “Discoveries in Islamic Countries” English version
- 1001 Inventions
- The Genius of China

6.0 Follow up Action

- i. Refine the document from the working group in Kuala Lumpur workshop.
- ii. Collection of detail information related to the framework
- iii. Submission of information to working group coordinator Dr. Tasneem of Pakistan by 15th February 2018
- iv. Compilation of the documentation by Dr Tasneem in following format:
 - opening speech related to the workshop
 - the draft of curriculum fusion of civilization
 - agenda of the workshop
 - presentation of the country
 - relevance information that support the suggested activity
- v. Distribution of complete document by first week of March of 2017

7.0 Proposed Agenda for Next 4-Day IAP SEP Workshop in Islamabad, Pakistan (9 to 12 April 2018)

- i. Review of document as resulted from Kuala Lumpur workshop
- ii. Presentation of suggested content from each member of working group
- iii. Refining the first draft of document
- iv. Way forward for the follow-up workshop in Beijing.



FUSION OF CIVILISATIONS UNDER ONE BELT ONE ROAD INITIATIVE: WORKSHOP FOR DEVELOPING THE CURRICULUM

11-15 DECEMBER 2017
KUALA LUMPUR, MALAYSIA



INTRODUCTION

The Inter-Academy Partnership (IAP) is the umbrella body of about 110 national academies of sciences and the current chairman of the Inter-Academy Partnership Science Education Programme (IAP SEP) Global Council is Dato' Ir. (Dr.) Lee Yee Cheong with the Academy of Sciences Malaysia as the Lead Academy. The main focus of IAP SEP is Inquiry-Based Science Education and Science Communication and the Fusion of Civilisations Curriculum under the One Belt One Road Initiative is one of its projects.

The project arose out of the need to inculcate peace and harmony through science in the light of the current conflict and increase in violence in societies, and terrorism resulting in atrocities and displaces persons. The project believes that instilling peace and respect should begin with the very young through evidence-based science education. Hence there

is a need to develop a curriculum on the fusion of civilisations highlighting the discoveries and contributions of trade and culture through science and technology from each civilisation. This will not only help to relate the early scientific discoveries to modern science but also to acknowledge that progress in science is due to the contribution of discoveries of various civilisations. It will also instil respect amongst pupil and promote tolerance, understanding and respect for one another's culture and tradition.

Two forums were held earlier to discuss the concept and this workshop is a follow-up of the two previous forums held in Sudan and Beijing.

OBJECTIVES

The workshop aims to achieve the following:

1. To define the aims and objectives of the fusion of civilisations curriculum;
2. To identify and collate culture, trade, and science & technology Discoveries in the beneficial interactions of the Civilizations of the ancient land and ocean silk roads in the curriculum in OBOR countries; and
3. To prepare a curriculum framework on the fusion of civilisations towards understanding and peace.



PROGRAMME

	Monday 11 Dec	Tuesday 12 Dec	Wednesday 13 Dec	Thursday 14 Dec	Friday 15 Dec
9.00 am	Introduction to OBOR - Dato' Ir. (Dr.) Lee Yee Cheong and definition of terms	Presentation of syllabus items on historical / cultural/ scientific events along Land & Maritime silk road (Indonesia)	Identification of aims & objective of the Fusion of Civilisations Curriculum and Curriculum Framework	Identification of content of the Fusion of Civilisation Curriculum	Identification of teaching strategy & classroom activities
10.00 am	Briefing on Workshop & Group Photo				
10.30 am	Tea Break	Tea Break	Tea Break	Tea Break	Tea Break
11.00 am	Presentation of syllabus items on historical / cultural / scientific events along Land & Martime silk road (China & Malaysia)	Curriculum Design for the History and Contribution of Science and Technology in Muslim Countries (Malaysia)	Identification of content of the Fusion of Civilisation Curriculum	Identification of content of the Fusion of Civilisation Curriculum	Presentation of first draft of Curriculum for Fusion of Civilisation
		Presentation on Science Communication – Museum Education (Thailand)			
12.30 pm	Lunch	Lunch	Lunch	Lunch	Lunch
2.00 pm	Presentation of syllabus items on historical / cultural / scientific events along land and Maritime silk road (Iran & Pakistan)	Identification of aims of objective of the Fusion of Civilisations Curriculum and Curriculum Framework	Identification of content of the Fusion of Civilisation Curriculum	Identification of teaching strategy & classroom activities	Summing up and proposal for follow-up activities
2.45 pm					
4.30 pm	Tea and Adjourn	Tea and Adjourn	Tea and Adjourn	Tea and Adjourn	Tea & End of Programme

PARTICIPANTS

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10. Datin Maharom Mahmood, former Head of History & Local Studies Unit, Curriculum Development Division and history curriculum expert (retired).
11. Dato' Dr. Sharifah Maimunah Syed Zin, special assistant to IAP SEP Global Council Chair.

ORGANISERS

The Inter-Academy Partnership Science Education Programme (IAP SEP) in collaboration with the Academy of Sciences Malaysia

The Global IAP Science Education Programme was launched in 2003. Its main focus is the promotion of inquiry-based science education (IBSE) - or "learning by doing" - especially for primary-school-aged children. It is also focused on improving science literacy among the general population.

Lead Academy: Academy of Sciences Malaysia (ASM)

Chair of the Global Council (2013): Academician Dato' Ir. (Dr) Lee Yee Cheong (Malaysia)

(Special Assistant to the Chair: Dato' Dr. Sharifah Maimunah (Malaysia))