



## **TRAINING WORKSHOP ON S&T DISCOVERIES ALONG THE SILK ROUTES 6-9 AUGUST 2024, SERIAN, SARAWAK**

### **Concept Note**

#### **BACKGROUND**

---

##### **International Science, Technology and Innovation Centre (ISTIC) for South-South Cooperation under the auspices of UNESCO**

Established in 2008, the International Science, Technology, and Innovation Centre for South-South Cooperation (ISTIC) has emerged as a pivotal institution facilitating collaboration among nations in the realms of science, technology, and innovation. With over a decade of impactful operation, ISTIC now charts a course for its future development, envisioning a dynamic evolution over the next six years to meet the changing demands of the global development landscape and the evolving needs of its partners.

Drawing upon valuable insights gleaned from past evaluations and extensive experience, ISTIC's new strategic plan underscores its unwavering commitment to serving as a catalyst and facilitator of support in alignment with the mandates of the Malaysian Government and UNESCO. This strategic vision reaffirms ISTIC's dedication to fostering collaboration among governments, civil society organizations, and the private sector, recognizing the crucial role of collective action in driving sustainable development.

At its core, ISTIC is dedicated to emerging as the foremost international hub for collaborative initiatives, nurturing comprehensive talents, fostering institutional excellence, and enhancing societal well-being through South-South Cooperation. By harnessing the collective expertise and resources of its diverse stakeholders, ISTIC strives to drive innovation, facilitate knowledge exchange, and empower communities across the Global South.

Expanding its mandate, ISTIC will play a pivotal role in enhancing the research ecosystem within the region. By creating a supportive environment for research and innovation, ISTIC seeks to stimulate the advancement of cutting-edge technologies, promote scientific discovery, and bolster research capacities in member nations. Through strategic collaborations with research institutions, academia, and industry partners, ISTIC will facilitate knowledge dissemination, offer technical assistance, and establish collaborative research networks. This proactive approach to enhancing the research ecosystem underscores ISTIC's commitment to driving sustainable development and tackling pressing challenges facing the South-South region.

#### **PROJECT BACKGROUND**

---

Education plays a key role in producing the citizens for today and tomorrow with the required academic, social, and ethical values. Various subjects are introduced to ensure that students have

the skills, attitudes and values to face the many challenges at the personal, national and global levels which include conflicts among humans. It is therefore conceived that promoting world peace and harmony should be promoted among students from a young age. It is based on the premise that by understanding and having good perceptions of different civilisations that contribute to present day knowledge, children will appreciate the need for and importance of living in peace and harmony. It is out of this need that the Fusion of Civilisations Education Curriculum is conceived. The curriculum highlights the discoveries and contributions of culture, trade, science and technology from various civilisations and their impacts on other civilisations through the land and oceanic silk routes. It will hopefully instil respect amongst the young and promote tolerance, understanding and respect for each other's culture and tradition.

The curriculum infuses both history and science and traces the travels of Ibn Battuta and Zheng He along the land and maritime silk roads respectively. A module is prepared with ready to use science and technology activities with a focus on inquiry – based science education (IBSE). Malaysia, through the Ministry of Education was involved in the preparation of the module in line with the principles of curriculum design and development. The approach used in the delivery of the lessons is based on IBSE, which is recognized as an effective delivery which makes science interesting, engaging the minds of the students, using techniques such as raising questions, collecting data, reasoning, reviewing evidence, drawing conclusions, discussing results whilst also developing language skills.

This is a project initiated by the Inter-Academy Partnership (IAP) which is a global network of science, engineering and medical academies working together to provide independent expert advice on scientific, technological and health issues. The global IAP Science Education Programmes (IAP SEP) focuses on promotion of inquiry-based science education (IBSE) which emphasises a hands-on approach to teaching and learning science especially for primary school children. ISTIC was an active contributor to the initiative and coordinated the project.

## **PROJECT OBJECTIVES**

1. To give exposure to participants of the role of the land and maritime silk routes and the science and technology discoveries along the silk routes
2. To enable participants to experience inquiry-based science education (IBSE) approach in the teaching of science in schools
3. To promote better understanding of the contributions and assimilation of various civilisations and to respect these

## **COLLABORATORS**

---

The project will be implemented with the following partners:

1. Jabatan Pendidikan Negeri Sarawak
2. Pejabat Pendidikan Daerah Serian, Sarawak

<b>No</b>	<b>Collaborator</b>	<b>Remarks</b>
1.	Jabatan Pendidikan Negeri Sarawak	National
2.	Pejabat Pendidikan Daerah Serian, Sarawak	National

## **Jabatan Pendidikan Negeri Sabah (JPN Sarawak)**

JPN Sarawak plays a crucial role in overseeing education within the state of Sarawak, Malaysia. The department was previously known as Jabatan Pelajaran Negeri Sarawak until 2013 when it was renamed to Jabatan Pendidikan Negeri Sarawak. This change occurred after the merger of the Malaysian Ministry of Education with the Ministry of Higher Education. The management and administration of JPNS are led by the Director of Education.

JPNS is organized into fourteen main sectors to efficiently handle educational matters in the state.studies.

## **Pejabat Pendidikan Daerah Serian (PPD Serian)**

Pejabat Pendidikan Daerah Serian, also known as the Serian District Education Office, plays a vital role in overseeing education in the state of Sarawak, Malaysia. In Sarawak there is 14 districts and PPD Serian is PPD that oversee the education management in Serian district.

## **TARGET PARTICIPANTS**

---

This program endeavors to be free and open to teachers and education professionals. We anticipate the participation of around 30-40 attendees in the workshop. The curriculum itself targeted upper secondary school teachers.

## **TRAINERS AND EXPERTS**

---

The proposed experts for the workshop comprise of the committee that develop the modules. Their diverse expertise ensures a comprehensive learning experience, and practical knowledge to enrich participants' understanding and skills development.

The recommendations experts are as follows:

1. Dato' Dr Sharifah Maimunah Sted Zin
2. Puan Salbiah Mat Som
3. Puan Zainun Abdul Majid

## **DATE AND VENUE**

---

Tentative date is in 6-9 August 2024

## **PROJECT ACTIVITIES**

---

### **1.0 Workshop**

The workshop modules provide schoolteachers with IBSE approach in teaching and learning science. Through interactive sessions and practical exercises, participants will enhance their teaching skills and learn new methodologies to make the teaching and learning activities fun and engaging.

The programme is crafted as mixed of theories and hands-on activities or project-based learning activities:

1. Introduction to OBOR Project, Module and Programme Briefing
2. Hands on Activity 1 – Maritime Silk Route (Windssocks)
3. Hands on Activity 2 – Maritime Silk Route (Water Clock)
4. Hands on Activity 3 – Land Silk Route (Pillars)
5. Hands on Activity 4 – Land Silk Route (Water Pump)
6. Hands on Activity 5 – Land Silk Route (Windlass)
7. Hands on Activity 6 - Land Silk Route (Oasis in the Desert)
8. Hands on Activity 7 - Land Silk Route (Compass)
9. Hands on Activity 8 - Land Silk Route (The Water Wheel)
10. Hands on Activity 9 - Maritime Silk Route (Junk)
11. Assessment for Students
12. Sharing of Experience Implementing IBSE

## **PROJECT DELIVERABLES AND OUTPUT**

---

These deliverables and outputs aim to ensure that the workshop provides school teachers with valuable learning experiences.

Project Deliverables and Outputs:

1. Provide well-structured training materials, including informative presentation slides, handouts, and supplementary resources. These materials should cover key S&T discoveries along the Silk Routes, ensuring participants have a solid reference for the workshop content.
2. Design and implement interactive sessions that encourage participant engagement, such as group discussions, project design, and hands-on activities. Document insights and outcomes from these sessions to enhance the learning experience and promote active participation.
3. Establish a system for collecting participant feedback to evaluate the workshop's effectiveness. Compile feedback and insights into a comprehensive report, highlighting areas of success and improvement. This report can guide future workshops and ensure continuous improvement.
4. Create an online repository or platform where participants can access post-workshop resources, including presentations, additional reading materials, and relevant references. This resource hub serves as a lasting knowledge base for participants and encourages ongoing learning and collaboration.

## **PROJECT EXPECTED OUTCOMES**

---

These outcomes aim to empower mid-career researchers to navigate their career transitions effectively, emerge as effective research leaders, and make meaningful contributions to their fields and institutions.

1. The workshop aims to equip teachers with enhanced pedagogical skills in IBSE methodologies. Teachers should gain a deeper understanding of how to integrate inquiry-based approaches into their science curriculum, fostering a more interactive and student-centered learning environment. This outcome would be measured by participants' ability to design and implement IBSE lessons effectively.

2. One of the primary goals is to enrich teachers' knowledge about the historical and contemporary science and technology discoveries along the Silk Routes. Teachers should leave the workshop with a comprehensive understanding of the scientific contributions made along these historical trade routes, enabling them to incorporate this knowledge into their lessons. This outcome can be assessed through post-workshop assessments and discussions.
3. The workshop aims to facilitate the formation of collaborative networks among teachers. Participants should establish connections with colleagues who share similar interests in IBSE and S&T discoveries. This collaborative network can serve as a platform for ongoing support, resource-sharing, and professional development. The establishment and sustainability of these networks can be assessed through post-workshop surveys and follow-up activities.

## **IMPACT ANALYSIS**

---

### Enhanced Student Performance in Science:

1. Improvement in student scores: Analyze standardized test scores and classroom assessments to identify any noticeable improvement in students' science performance.
2. Quality of student projects: Assess the complexity and creativity of student projects, looking for evidence of deeper understanding and application of science concepts.
3. Analysis:
  - a. Short-Term Impact: Immediate implementation of IBSE techniques may lead to increased student engagement and interest in science.
  - b. Long-Term Impact: Continual use of IBSE in teaching practices may contribute to sustained improvements in students' critical thinking skills, scientific inquiry abilities, and overall academic performance.

### Integration of Scientific, Historical and Cultural content into Curriculum:

1. Presence in lesson plans: Evaluate the inclusion of Silk Routes-related content in teachers' lesson plans and instructional materials.
2. Curriculum adaptation: Assess whether there are long-term changes in the official science curriculum to incorporate the historical and technological aspects of the Silk Routes.
3. Analysis:
  - a. Short-Term Impact: Immediate incorporation of Silk Routes content into lessons and activities.
  - b. Long-Term Impact: Enduring changes in curriculum design and development, demonstrating a sustained commitment to integrating historical and cross-cultural perspectives into science education.

### Professional Growth and Collaboration:

1. Participation in professional development activities: Monitor teachers' ongoing engagement in workshops, conferences, or training sessions related to IBSE and Silk Routes discoveries.
2. Collaborative initiatives: Track the formation and continuation of collaborative networks among teachers, including the exchange of resources and best practices.
3. Analysis:
  - a. Short-Term Impact: Increased awareness and enthusiasm for IBSE and Silk Routes knowledge, as evidenced by participation in related activities.

- b. Long-Term Impact: Development of a strong community of practice among teachers, leading to continuous professional growth, mutual support, and a sustainable culture of inquiry-based teaching

## TENTATIVE WORKSHOP PROGRAMME

---

### TENTATIVE SCHEDULE

DAY 1 – 6 AUGUST 2024 (TUESDAY)	
0830 – 0900	Registration
0900 – 1000	<b>Welcome Address</b> by Professor ChM. Dr. Mohd Basyaruddin Abdul Rahman, FASc, FRSC, FIAAM <b>Welcome Address</b> by Education Officer, PPD Serian <b>Opening Address</b> by YBhg Datu Dr Azhar Ahmad, Director, Sarawak State Education Department, Ministry of Education <b>Group photo</b>
1000 – 1030	Tea Break
1030 – 1130	<b>Introduction to OBOR Project, Module and Programme Briefing</b> by Dato' Dr Sharifah Maimunah Syed Zin
1130 – 1300	<b>Hands on Activity 1</b> – Maritime Silk Route (Windssocks) pg134 by Mrs. Salbiah Mohd Som
1300 – 1430	Lunch Break
1430 – 1600	<b>Hands on Activity 2</b> – Maritime Silk Route (Water Clock) pg159 by Mrs. Zainon Abdul Majid
1600 – 1630	Tea Break
1630 – 1730	<b>Hands on Activity 3</b> – Land Silk Route (Pillars) pg82 by Mrs. Salbiah Mohd Som
1730	End of Day 1
DAY 2 – 7 AUGUST 2024 (WEDNESDAY)	
0830 – 0845	Registration
0845 – 1030	<b>Hands on Activity 4</b> – Land Silk Route (Water Pump) pg52 by
1030 – 1100	Tea Break
1100 – 1300	<b>Hands on Activity 5</b> – Land Silk Route (Windlass) pg25 by Mrs. Salbiah Mohd Som
1300 – 1430	Lunch Break
1430 – 1630	<b>Hands on Activity 5</b> - Land Silk Route (Windlass) pg25 - con't by Mrs. Salbiah Mohd Som
1600 - 1630	Tea Break
1630 - 1730	<b>Hands on Activity 6</b> - Land Silk Route (Oasis in the Desert) pg41 by Mrs. Zainon Abd. Majid
1730	End of Day 2
DAY 3 – 8 AUGUST 2024 (THURSDAY)	
0830 – 0845	Registration
0845 – 0900	Review of Last 2 Days
0900 – 1030	<b>Hands on Activity 7</b> - Land Silk Route (Compass) pg124 by
1030 – 1100	Tea Break
1100 – 1300	<b>Hands on Activity 8</b> - Land Silk Route (The Water Wheel) pg33 by Mrs. Salbiah Mohd Som

1300 – 1430	Lunch Break
1430 – 1600	<b>Hands on Activity 9</b> - Maritime Silk Route (Junk) pg167 <i>by Mrs. Zainon Abdul Majid</i>
1600 - 1630	Tea Break
1630 – 1730	<b>Hands on Activity 9</b> - Maritime Silk Route (Junk) pg167 – con't <i>by Mrs. Zainon Abdul Majid</i>
1730	End of Day 3

#### DAY 4 – 9 AUGUST 2024 (FRIDAY)

0830 – 0845	Registration
0845 – 0900	Review of Previous Day
0900 – 1000	<b>Assessment for Students</b> <i>by Mrs. Salbiah Mohd Som</i>
1000 – 1030	Tea Break
1030 – 1130	<b>Sharing of Experience Implementing IBSE</b> <i>by</i>
1130 – 1200	<b>Review of Workshop</b> <i>by Dato' Dr Sharifah Maimunah Syed Zin</i>
1200 - 1230	<b>Presentation of Certificate and Closing</b> <i>by Mrs. Tengku Sharizad Tengku Dahlan</i>
1230	Lunch and End of Workshop

## BUDGET

### 1. Total Cost of Workshop

The total budget required for the training is about **RM85,241.81** which is meticulously planned to ensure the seamless execution of the workshop, guaranteeing top-quality interactive workshops session and engaging project-based learning. Despite the comprehensive nature of the budget, a concerted effort is made to maintain cost-effectiveness and accessibility for all participants. Through prudent financial management, the aim is to maximize the value derived from the allocated funds, fostering an enriching and impactful workshop experience for all involved.

The details of the budget are as below:

### 2. Partners Contribution

The contribution from each partner is as per below table:

ISTIC	<b>RM68,741.81</b>	<b>80.64%</b>
JPN Sarawak & PPD Serian	<b>RM16,500.00</b>	<b>19.36%</b>

### 3. Budget Required from ISTIC

The budget allocated by ISTIC for this programme is **RM68,741.81**.

No	Description	Unit of Measurement (Frequency)					Contribution (RM)		Contribution % from total budget	
		Unit Cost	#	Unit	#	Freq	ISTIC	JPN Sarawak & PPD Serian	ISTIC	
A	<b>ITEM1 : MEETING PACKAGE (Meeting Room/Facilities/Meal)</b>									
	1.1	Venue (50 pax)	30	50	person	4	day		RM10,000.00	-
	1.2	Meals (50 pax)	30	50	person	4	day	RM6,000.00		
<b>Sub Total</b>							<b>RM6,000.00</b>	<b>RM10,000.00</b>	<b>37.50%</b>	
B	<b>ITEM2 : RESIDENTIAL / HOTEL ACCOMMODATION</b>									
	2.1	Hotel Accommodation	250	25	person	6	night	RM37,500.00	0	-
		a) ISTIC Secretariat (2 pax)								
		b) Speakers/Trainers (3 pax)								
	c) Participants (20 pax)									
<b>Sub Total</b>							<b>RM37,500.00</b>	<b>0</b>	<b>100.00%</b>	
C	<b>ITEM3 : TRANSPORTATION</b>									
	3.1	Airfare	500	22	person	1	time	RM11,000.00	-	-
	3.2	Airport Transfer	80	50	person	1	time		RM4,000.00	
	3.3	Ground Transport	50	50	person	1	time		RM2,500.00	-
<b>Sub Total</b>							<b>RM11,000.00</b>	<b>RM6,500.00</b>	<b>62.86%</b>	
D	<b>ITEM4 : HONORARIUM</b>									
	4.1	Honorarium Speakers/Trainers/Facilitator (8hours/4days/RM300 per hour)	300.00	3	person	8	hour (perday)	RM9,600.00	0	-
<b>Sub Total</b>							<b>RM9,600.00</b>	<b>0</b>	<b>100.00%</b>	
E	<b>ITEM5 : OTHERS</b>									
	5.1	Advertisement & Office Expenses	500	1	package	1	time	RM500.00	-	-
	5.2	Certificate Holder & Certificate Paper	20	30	person	1	time	RM600.00	-	-
	5.3	Lanyard and Name Tag Laminate	5	30	person	1	time	RM100.00	-	-
	5.4	Training Bag for Speakers/Trainers and Participants	10	30	person	1	time	RM441.81	-	-
	5.5	Contingency	625	1	package	1	time	RM3,000.00	-	-
<b>Sub Total</b>							<b>RM4,641.81</b>	<b>RM0.00</b>	<b>100.00%</b>	
<b>GRAND TOTAL FOR EACH CONTRIBUTION</b>							<b>RM68,741.81</b>	<b>RM16,500.00</b>		

