MALAYSIA EDUCATION PROGRAMME IN COMMEMORATION OF NATIONAL “ANGKASAWAN” PROGRAMME

Mhd Fairos Asillam
National Space Agency of Malaysia(ANGKASA)

United Nations/Malaysia Expert Meeting on Human Space Technology
15 Nov 2011
Putrajaya, MALAYSIA
PART 1
• Malaysia education activities during 1NAP

PART 2
• Finding/Lesson learn

PART 3
• Managing the opportunities

PART 4
• Recommendation
• Conclusion
FIRST

• To design and implement the education programme, a coordinating committee was form.

• Members:
  i) ANGKASA
  ii) MOE
  iii) UKM
TEACHING MODULE

Objective
To be used by teachers as members of core group who understand the concepts on microgravity for teaching in classroom and conducting a video live session with Angkasawan in ISS

Overview
The preparation of the module took 3 stages:

i. Exploring possible types of experiment / demonstration in ISS

ii. Testing of experiments and documenting the plan of the lesson

iii. Completing and refining the educational module in ISS
MAIN TOPIC OF THE MODULE

Three topics chosen for the module as represent of basic concepts in physics

i. Twisted Orbital Platform (Gasing)

ii. Fluid Behavior

iii. Newton’s Law
VIDEO LIVE TELECAST WITH ANGKASAWAN

Overview

• The peak of the program on education science on microgravity through the Angkasawan Programme.

• Video Live Telecast (19 Oct. 2007, 8.40 p.m. to 8.48 p.m.) together with Angkasawan at National Science Centre and the direct telecast was to be managed by MIMOS and ASTRO.

• About 330 students mainly from Klang Valley were involved

The highlight of the live telecast was a demonstration of experiments by our Angkasawan and Q&A session.
MICROGRAVITY SCIENCE EDUCATION PROGRAM (C. elegans)

OBJECTIVE

• To learn and conduct the web based investigation instead of real experiments.
• To develop student interest and skill in scientific experiments and research.
Student presentation on their research

Discussion with scientist on their research
PART 2
Finding/Lesson learn
EDUCATIONAL EXPERIMENTS
Top Spinning in Weightlessness & Flow of Fluid

Q (Teachers):
•Do you think the top spinning and flow of fluids experiments conducted by Dr. Sheikh provide some form of input to construct the school experiment module?

YES: 78%      NO: 11%      NOT SURE: 11%

Majority of these teachers’ concurs that the experiment did provide some help in developing the school experiment modules.
POPOPULARIZE SPACE SCIENCE

Efforts by ANGKASA to ‘popularize’ space science via ‘road shows’ got the thumbs up from 67% of the school teachers interviewed.

Q (Teachers):
Do you think the educational ‘road show’ organised by ANGKASA benefited the school children?

YES: 67%  NO: 22%  NOT SURE: 11%
• Teachers should have a place in the future NAP. More than 60% of the expert stakeholder respondents agree that our NAP program should emulate NASA’s Educator Astronaut program.

• Almost 78% of the teachers interviewed agreed that a teacher in NAP would inspire school children to greater heights.

<table>
<thead>
<tr>
<th>Question</th>
<th>Teachers:</th>
<th>YES: 78%</th>
<th>NO: 0%</th>
<th>NOT SURE: 22%</th>
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<tbody>
<tr>
<td>Expert Stakeholder:</td>
<td>YES: 63%</td>
<td>NO: 24%</td>
<td>NOT SURE: 13%</td>
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Q: One of the objectives of the Angkasawan Program is to inculcate the interest of young Malaysians to explore new science and technology. In your opinion, does the program able to achieve the objective?

General Public: YES 79%  NO 11%  NOT SURE 10%
Top59 Candidates: YES 85%  NO 08%  NOT SURE 07%
RECOMMENDATIONS

• Recommendation 1:
  • Develop Comprehensive Space Policy Program

• Recommendation 2:
  • Proceed With Sending Second Angkasawan to Space

• Recommendation 3:
  • Emulate NASA’s Educator Astronaut Program

• Recommendation 4:
  • Rope in the Services of Top4 or Top59 NAP Candidates

• Recommendation 5:
  • Reevaluate ANGKASA Strategies in Selling NAP to the Public

REPORT: COST BENEFIT ANALYSIS OF THE NATIONAL ANGKASAWAN
PART 3
Managing the opportunities
APPREACH

Education is Future Investment
NATIONAL ASTRONAUT PROGRAM (2007)

MALAYSIA MICROGRAVITY PROGRAMME

POST NATIONAL ASTRONAUT PROGRAM (2008 – 2011)

- Cells in Space
- Protein in Space
- Food in Space
- Microbes in Space

The Utilization of High Quality Protein Crystal Growth Experiment on Board the Japanese Experimental Module ‘Kibo’ (2009-2012)

MARS500 (2009-2012)

Space Science Educational Module (2009)

Asian Student’s Parabolic Flight (2007-2011)

Microgravity Workshop I (2008)
& II (2009)

Biosatellite Programme (2013-2015)

Space Science Educational Portal (2011)

Dialogue with Parliamentary Members on Microgravity Sciences (2010)

Malaysian Space Seed Programme (2010-2012)
MODUL PENDIDIKAN SAINS ANGKASA UNTUK SEKOLAH RENDAH

WE ARE SORRY: THIS ARTICLE IS ONLY APPLICABLE IN MALAY VERSION.

As per request, a digital version of the International Year of Astronomy 2009 (IYA2009), modul Pendidikan Sains Angkasa (MSA) is available for download. This resource is designed for primary school teachers to use in their classrooms.

The modul Pendidikan Sains Angkasa (MSA) is a comprehensive educational module that covers various topics related to space science. It is designed to help teachers in Malaysia incorporate space science into their curriculum. The modul is divided into several sections, each focusing on a specific topic such as the universe, the solar system, and galaxies.

For download, please visit the following link:

Sila klik pada link berikut untuk mendownload modul-modul tersebut.
Kata-kata aluan

Model 1: Universe
- Model 2: Stars & Constellations
- Model 3: Solar System
- Model 4: Earth, Moon, & Sun
Model 5: Astronomical Instruments & Methods
Model 6: Space Exploration

For more information, visit the National Space Agency (ANGKASA) website.

INTERNATIONAL YEAR OF ASTRONOMY (IYA2009)

SPACE SCIENCE EDUCATIONAL MODULE FOR PRIMARY SCHOOL (TEACHER TRAINING VERSION)
Malaysia Parabolic Flight Programme
MALAYSIA SPACE SEED PROGRAMME

Duration: 2010-2012
Combination of research & education programme

OBJECTIVES
a) To promote of microgravity science - space awareness;
b) To develop student interest and skill in scientific space experiments and research;
c) To compare, analyze and do hypothesis about the growth of microgravity environment – exposed seed compared to earth – grown seed

cili(Capsicum annuum (cv. MC11))
Public Lectures
Bringing The Earth To Space
Date: 13th October 2011  Time: 8.30 a.m  Venue: Dewan Senet, Bangunan Canselori Sultan Ibrahim, Universiti Teknologi Malaysia

Professor Dr. Takehiko Ishikawa
Japan Aerospace Exploration Agency (JAXA)

Mr. Shigeo Komigachi
Mr. Naoko Yamazaki
Space-Earth Observation Center
Canada Space Agency

Professor Dr. Norlaili Ishikawa
Science and Technology Agency (STAY) Japan

Mr. Mohd Helmy Bin Rashim
National Space Agency (Malaysia)

Research in Space
We, however also realized that The Earth is being destroyed when we observed the earth from outside.

Remote sensing (application of Space technology)

- Deforestation
- Desert expansion
- Global warming
- Ozone depletion

Warning to the future of human beings
What we learned on our planet from Space exploration!!

-EARTH VERY UNIQUE

1. Distance from the Sun
2. Size
3. Magnetic field

BASIC SCIENCE
RECOMMENDATION

• IMBEDDED EDUCATION PROGRAMME IN R&D/DEVELOPMENT MICROGRAVITY PROGRAMME;

• GLOBAL SHARING OF THE PROGRAMME

GIVE US OPPORTUNITIES
THE MOTIVATION MALAYSIA INVOLVE IN MICROGRAVITY SCIENCES

- BUILDING LOCAL CAPACITY

- BUILDING LOCAL CAPABILITIES

(basic infrastructure/spacelab/equipment, research mechanism, identified national priority needs and development goals/outcome) as well as estimate the national readiness
EDUCATION IS FUTURE INVESTMENT:
TO DEVELOP & STRENGTHEN NEW TALENTS

Thank You
fairos@angkasa.gov.my