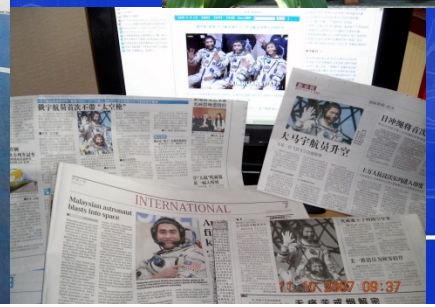
AGENSI ANGKASA NEGARA, KEMENTERIAN SAINS, TEKNOLOGI DAN INOVASI

National Space Agency, Ministry of Science, Technology and Innovation

MALAYSIA EDUCATION PROGRAMME IN COMMERMORATION 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

CONTENT

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 class room 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

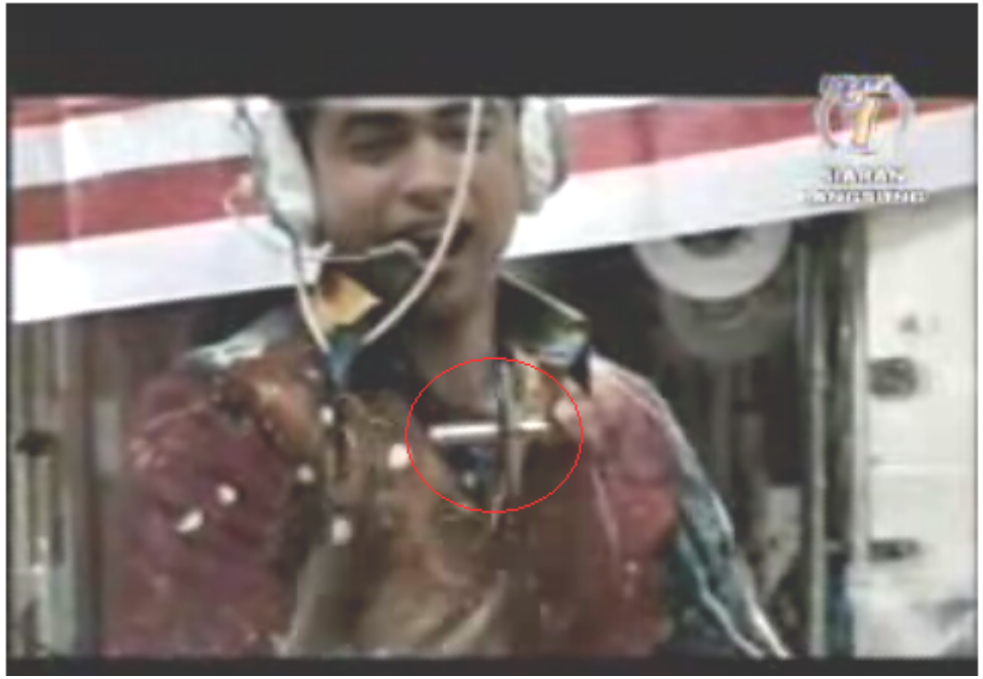
MAIN TOPIC OF THE MODULE

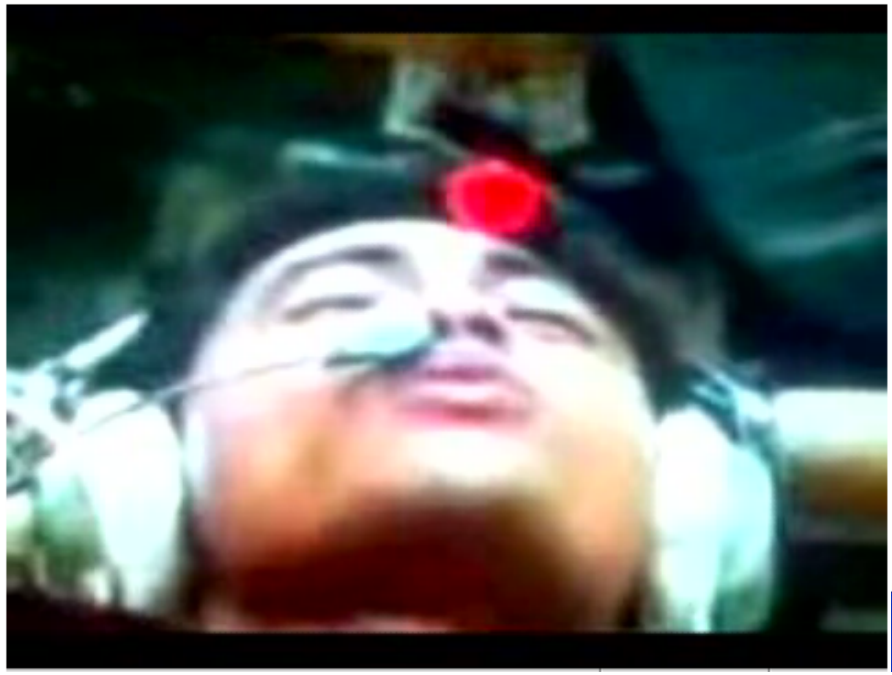
Three topics chosen for the module as represent of basic concepts in physics

i. Twisted Orbital Platform (Gasi

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


Satellite Ground Station 9M2RPN
NATIONAL PLANETARIUM

MICROGRAVITY SCIENCE EDUCATION PROGRAM (C. elegans)

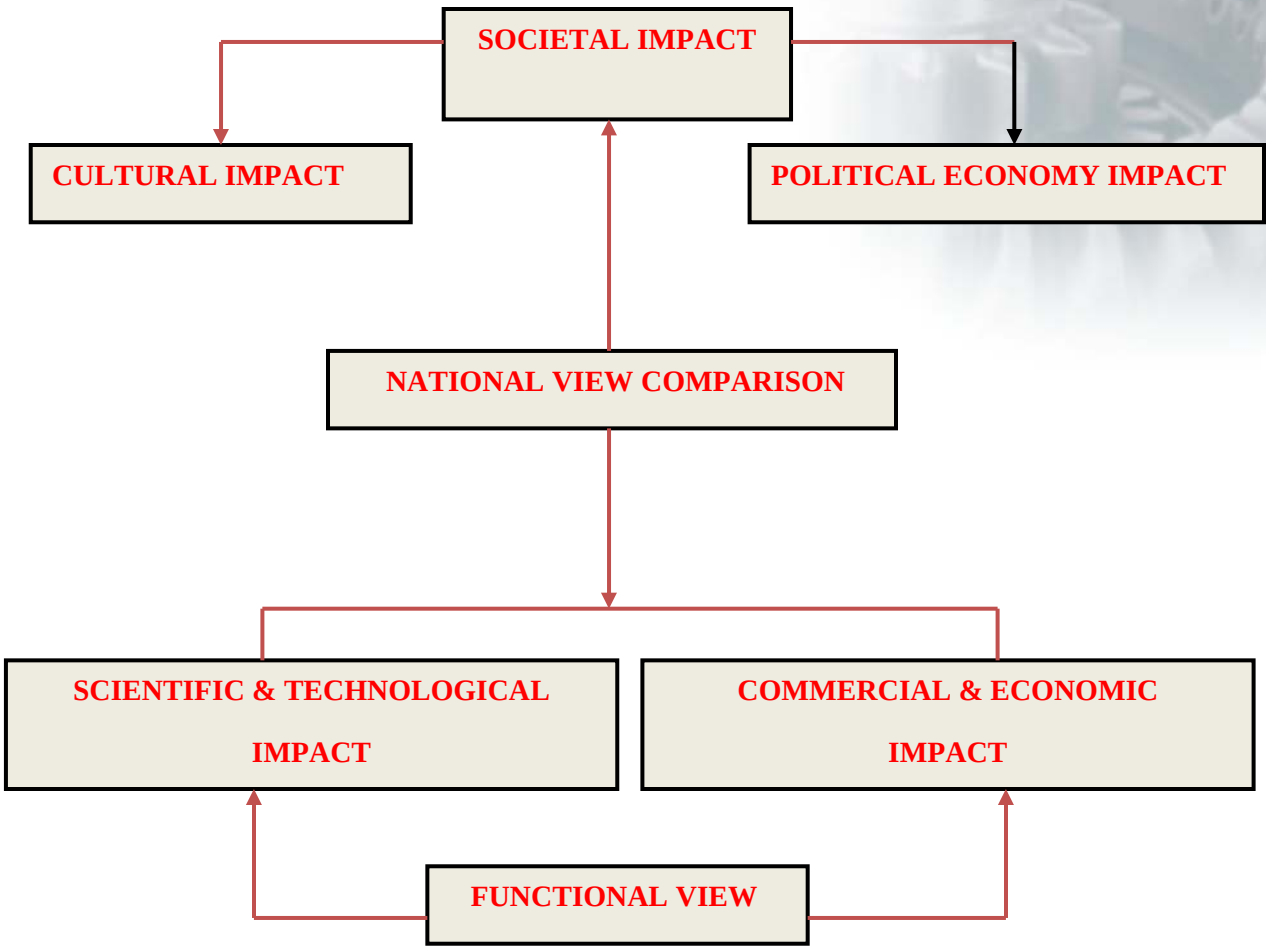
OBJECTIVE

- 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


SOCIETAL IMPACT
CULTURAL IMPACT
POLITICAL ECONOMY IMPACT
NATIONAL VIEW COMPARISON
SCIENTIFIC & TECHNOLOGICAL IMPACT
COMMERCIAL & ECONOMIC IMPACT
FUNCTIONAL VIEW

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 theses teachers' concurs that the experiment did provide some help in developing the school experiment modules.

POPULARIZE 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%*

TEACHER IN NAP

- 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.

***Q**:*
Do you think ANGKASA should emulate NASA's Teachers in Space program?

Teachers:	***YES: 78%***	*NO: 0%*	*NOT SURE: 22%*
Expert Stakeholder:	***YES: 63%***	*NO: 24%*	*NOT SURE: 13%*

OBJECTIVE ACHIEVED?

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

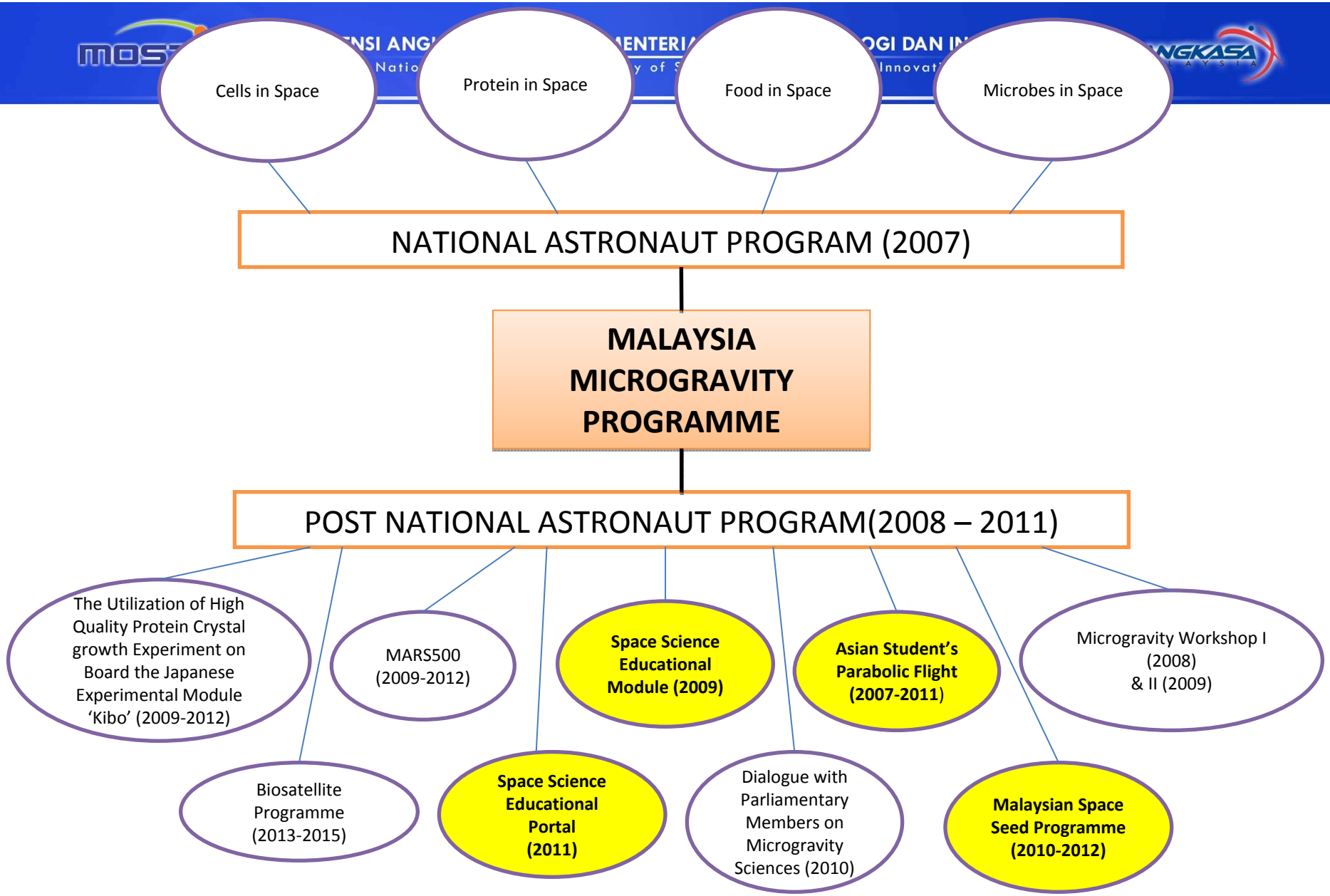
- Recommendation 5:
- **Reevaluate ANGKASA Strategies in Selling NAP to the Public**

REPORT: COST BENEFIT ANALYSIS OF THE NATIONAL ANGKASAWAN

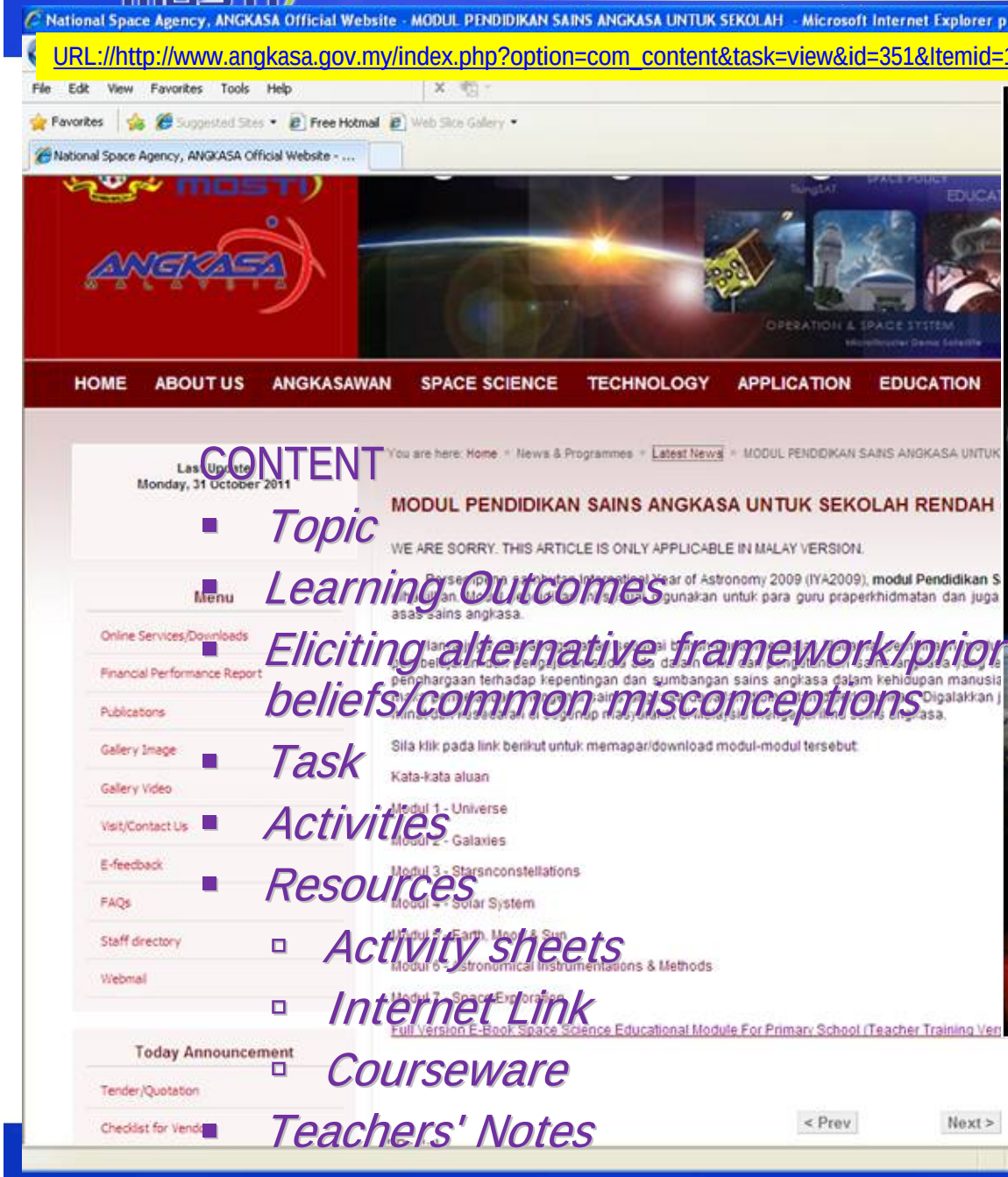
PART 3
Managing the opportunities

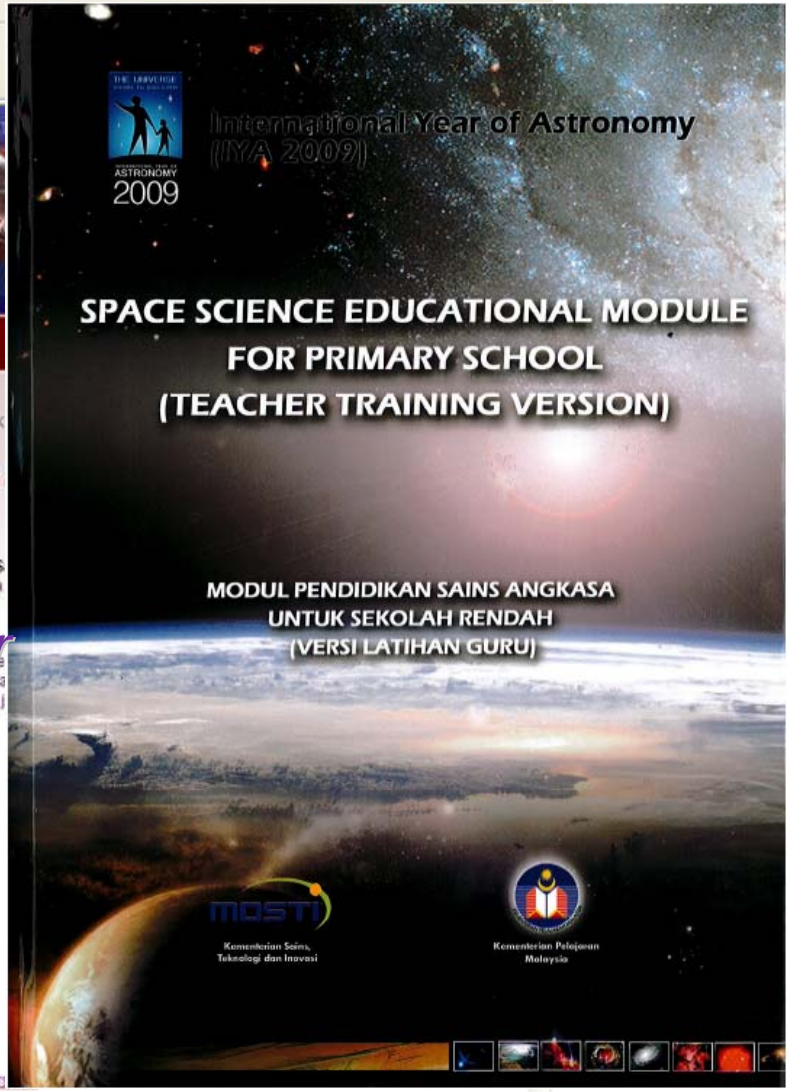
APPROACH

Education** is **Future Investment


Cells in Space
Protein in Space
Food in Space
Microbes in Space
NATIONAL ASTRONAUT PROGRAM (2007)
MALAYSIA MICROGRAVITY PROGRAMME
POST NATIONAL ASTRONAUT PROGRAM(2008 – 2011)
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)

URL://http://www.angkasa.gov.my/index.php?option=com_content&task=view&id=351&Itemid=101

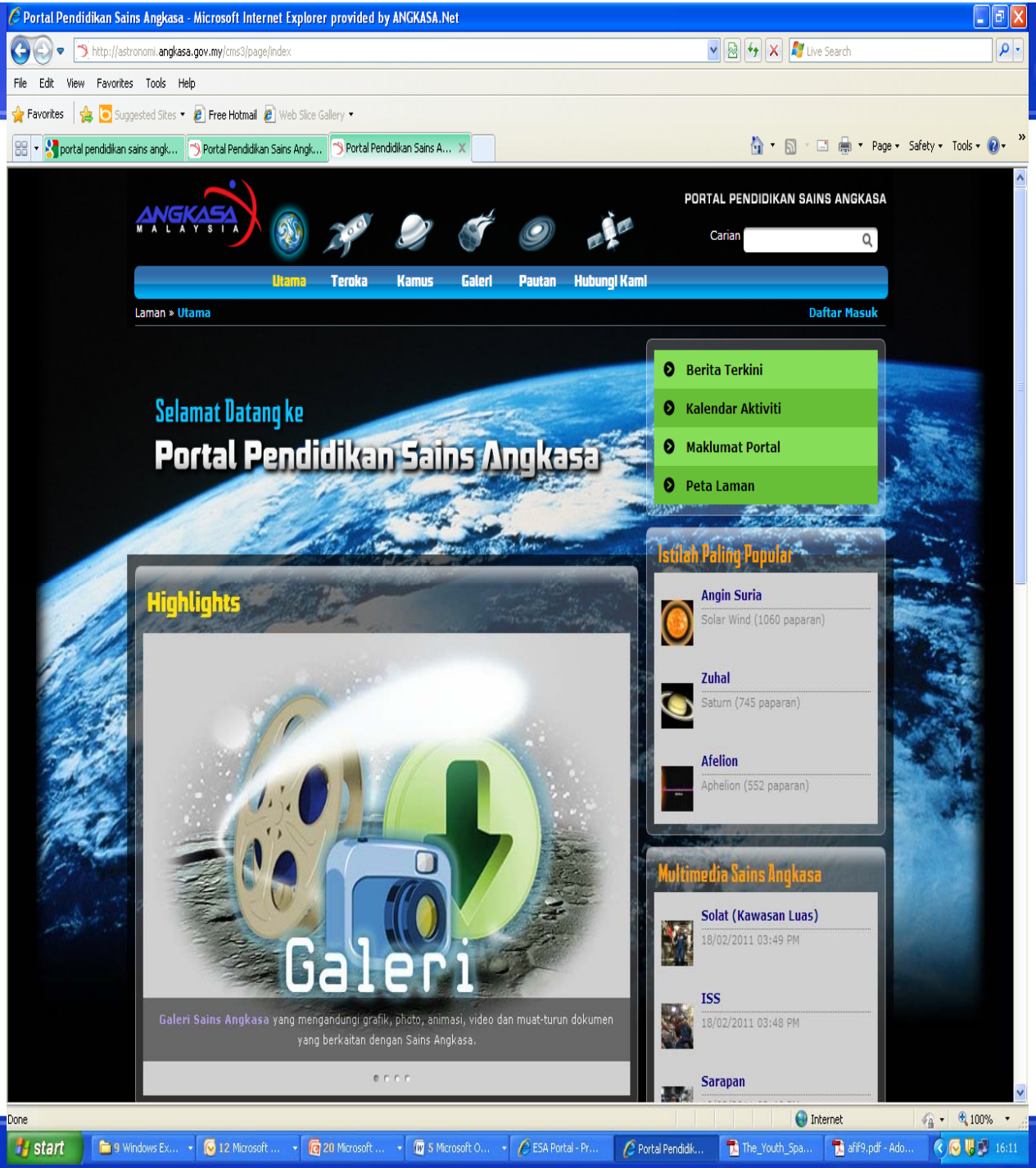




CONTENT

- *Topic*
- *Learning Outcomes*
- *Eliciting alternative framework/prior beliefs/common misconceptions*
- *Task*
- *Activities*
- *Resources*
  - *Activity sheets*
  - *Internet Link*
  - *Courseware*
- *Teachers' Notes*

Malaysia Parabolic Flight Programme


Portal Pendidikan Sains Angkasa - Microsoft Internet Explorer provided by ANGKASA.Net
http://astronomi.angkasa.gov.my/cms3/page/index
File Edit View Favorites Tools Help
PORTAL PENDIDIKAN SAINS ANGKASA
Carian
Utama Teroka Kamus Galeri Pautan Hubungi Kami
Laman » Utama
Daftar Masuk
Berita Terkini
Kalendar Aktiviti
Maklumat Portal
Peta Laman
Selamat Datang ke
Portal Pendidikan Sains Angkasa
Highlights
Galeri
Galeri Sains Angkasa yang mengandungi grafik, photo, animasi, video dan muat-turun dokumen yang berkaitan dengan Sains Angkasa.
Istilah Paling Popular
Angin Suria
Solar Wind (1060 paparan)
Zuhal
Saturn (745 paparan)
Afelion
Aphelion (552 paparan)
Multimedia Sains Angkasa
Solat (Kawasan Luas)
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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))

http://astronomi.angkasa.gov.my/spaceseeds


Public Lectures
Bringing The Earth To Space
Date : 13th October 2011
Time : 8.30 a.m
Venue : Dewan Senat, Bangunan Canselori Sultan Ibrahim,
Universiti Teknologi Malaysia
Professor Dr. Takehiko Ishikawa
Mr. Shigeki Kamigaichi
Professor Dr. Noriaki Ishioka
Mr. Mohd Helmy Bin Hashim
UTM
JAXA

SPACE EDUCATION IMPORTANT?

- 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

RECONMENDATION

- 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

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