Education level on space technologies and applications at schools in Sri Lanka

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Introduction
Formerly known as Ceylon

Area : 65,610 km²  
Maximum length : 432 km  
Maximum width : 224 km  
Population : Approx. 22 million  
Literacy rate: Approx. 92% (2020)
Education System in Sri Lanka
Types of schools

1. Government schools
   - National Schools
   - Provincial Schools
   - Better facilities than provincial schools

2. Non-government schools
   - International Schools
   - Private Schools
   - Overall better facilities and financial conditions

Other than these there are temple schools and special schools.
Education system at schools in Sri Lanka

- Primary
  - Grade 1 to Grade 5 (Scholarship Examination)

- Secondary
  - Grade 6 to Grade 11 (G.C.E Ordinary Level Examination)

- Collegiate
  - Grade 12 to Grade 13 (G.C.E Advanced Level Examination)
Education Level on Space Technologies
Results are based on a study I conducted.
Current education efforts in prompting space

- Chapter on science subject (grade 8) covering topics about solar system, eclipses, exploring the universe, artificial satellites, star constellations [1]
- Astronomy societies in schools
- Astronomy and Astrophysics Olympiad [2]
- Water rocket competitions
Activities and programs in schools related to space

Some schools have,

Astronomical Societies
Main areas covered by astronomical societies

• Astrophysics
• Cosmology
• Rocketry
Activities by astronomical societies

• Knowledge is being transferred by senior students to junior students
• Some of the leading schools gives lectures to other schools on request
• Night star gazing camps
• Guest lectures
• Small lessons on rocketry
• Some schools have water rocket activities
• Training for astronomy Olympiad
• Interschool astronomy quiz competition
• Astrophotography competitions
Comparison between government schools and non-government schools on space education

• Government schools had better performance in junior astronomy Olympiad 2022 [2]

• Government schools had better performance in astrophysics and astronomy Olympiad in 2019 and 2022 [2]

• Number of participants from government schools were higher [Year 2022]
Question

Are the students interested on learning about space technologies?

YES

The reasons why, they are interested

Students think it will be great to have technology owned by our own country to predict the natural disasters

As a hobby

To learn about space objects

Interest towards the rockets

Interest about satellite stabilization

Passionate about how the scientist determine the distances, different properties about planets, the technology behind

To develop equipment/technologies to observe the space

How we were able to come to these conclusions about universe, the technology behind
Sources used to gain the knowledge

- YouTube - Main source
- WhatsApp groups for knowledge sharing
- Research papers – Google scholar
- School library and public libraries
- Wikipedia, Britannica and references websites
Challenges according to the students on learning space technologies

• There is no teacher specialized about space systems at schools
• There is no university to study about space systems after leaving the school (Some universities have modules for astrophysics)
• There is no space industry, so interest of the students towards the space systems reduce as they grow
• Most of the books are in English
• In rural areas, the knowledge on space is extremely low
Effects after Raavana-1
Our first satellite was in the orbit.

Deployed to the orbit on: 2019 June 17

Re-entered in: 2021 October
Effects after Raavanna-1

Sri Lanka’s first satellite RAAVANA-1 reaches ISS - Ada Derana

RAAVANA-1 is a research satellite built by two Sri Lankan ... months of free-flight testing of news systems before reentering Earth’s ... Ada Derana · Ada Derana · Apr 19, 2019

RAAVANA-1: first ever Sri Lankan satellite launched (English) Watch More Video - http://goo.gl/2GOWJSA #adaderana #derananaews #aderana. YouTube · Ada Derana · Apr 19, 2019
Effects after Raavana-1

Interest about learning space technologies increased

Students tried engaging in space related activities

Air bearing tables, helmholtz coil as final year projects

Curiosity towards CubeSats satellites increased
Voluntary Activities

• I was able to do several guest lectures focusing **space technologies** at several schools.

• Current activities were focused on schools in Colombo district

• Next, the focus will be shifted to the schools outside Colombo.
THANK YOU

If there is no way, create one
References