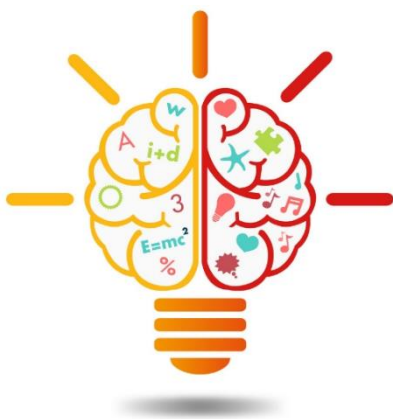


ASTI PROGRESSIVELY LEARNING & UNDERSTANDING SCIENCE (A-PLUS) 2019

ASTI REPORT



A-PLUS PILOT PROGRAMME

INTRODUCTION

Since its inception, ASTI, Association of Science, Technology and Innovation has been working towards inspiring the young generation of our nation to explore the world of science and innovation. We have many projects, including Science Fair for Young Children (SFYC), Young Inventors Challenge (YIC) and ASTI Leap Challenge (ALC), during which students will design and come up with various new inventions and innovations. We have been privileged to witness many creative and unique inventions produced by students throughout these years.

All our projects are designed as an educational tools where our participants learn for themselves from the tasks they undertake. Hence, for example in Young Inventors Challenge, our aim is not to develop inventions BUT to develop inventors.

However, we have noticed another skill could be further developed in students. We have realised that many students cannot cope with the science syllabus in secondary school. This is because although some experiments have been inserted in some chapters to explain and describe the specific chapters, but due to time constrain, teachers skip these experiments demonstrations and teach it theoretically.

We feel that to develop a student's understanding in science, particular scientific concepts and principles, the lessons have to be more hands-on, i.e. more experimental. Thus, in a classroom, experiments are more important than the theory. This is truer today where students can easily find these explanations on the internet (e.g. YouTube).

Thus we proposed starting the A-PLUS (ASTI Progressively Learning and Understanding Science) programme for SFYC Alumni students.

METHODOLOGY

In this programme, A-PLUS workshops under the name of “The A-PLUS Pilot Program” were organised in 2018.

Students were trained to conduct experiment and activities to help them understand the key scientific concepts and principles in their syllabus. The focus was less on theories since that was done at their schools. This programme aims to complement and enhance their learning experience in their classrooms.

We helped to introduce the key scientific concepts before they learn it in their schools. We helped them build a framework for their thinking before they got bombarded with information in their schools. This way, all the information they gained in their classroom were contextualized, thus helped to understand the subject better. This method of learning is based on the latest research in Brain science.

We also helped enhance their analysing skills, handling apparatus and materials, data collection and also communications.

A total of three workshops took place this year, which were held in March, May and September 2019. We charged the students a nominal fee of RM 70/student to help cover the cost of materials and food.

OBJECTIVE

The objectives of the workshops are:

- 1.To build a framework of thinking for the students to understand science better.
- 2.To increase the students’ understanding level of their school’s science syllabus.
- 3.To train students to conduct data experiments which includes data collection/extraction skill, analysing and drawing conclusions.

WORKSHOP SUMMARY

The ASTI Progressively Learning and Understanding Science (A-PLUS) were held at SJKT Taman Permata, Dengkil this year. The first workshop was held on 2nd March 2019, Saturday. The following workshops were held on 18th May 2019, Saturday and 7th September 2019, Saturday. The workshops started at 9.00 a.m. and ended at 5.00 p.m. A total of 3 workshops were held in this programme. The participants were Form One students.

Workshop 1, 2nd March 2019, Saturday

The day started at 8.30 a.m. with the arrival of the participants. Participants received ASTI's notebook upon the workshop fee payment was made followed by breakfast. There was a short briefing on the workshop's safety, rules & regulations as well as a briefing about the programme. The workshop started exactly at 9.15 a.m. The session started with Chapter 1: Scientific Methodology. Our trainer conducted experiments related to the topic. The session ended at 1.00 p.m. and lunch break was given to the participants.

After lunch, the session continued with Chapter 2: Cell as the Basic Unit of Life until 3.30 p.m. The following session was on Chapter 3: Coordination and Response which extended to 5.00 p.m.

Workshop 2, 18th May 2019, Saturday

The second workshop started at 8.30 a.m. with the arrival of participants and breakfast was served. The first session of the workshop was on Chapter 4: Reproduction which started at 9.00 a.m. after a quick briefing on the class rules. Later, the participants were given a task to conduct an experiment on their own and present what they understood. This was followed by the next session, Chapter 5: Matter.

At 1.30 p.m., the participants had their lunch break. The afternoon session continued with Chapter 5: Matter which ended at 3.30 p.m. The workshop concluded with Chapter 6: Periodic Table.

Workshop 3, 7th September 2019, Saturday

The third workshop started at 9.00 a.m. with the first session on Chapter 7: Air followed by experiments based on the chapter. Students were given materials needed to conduct an experiment in groups. The session ended at 1.00 p.m. and lunch break was given to the participants.

The following session after lunch was Chapter 8: Light and Optics and Chapter 9: Earth. The workshop ended at 5.00 p.m. with the Closing Ceremony during which a certificate of participation was presented to each participant.



Summary of Event Agenda

WORKSHOP 1		
DATE	TIME	ITENARY
02/03/2019	8.30 a.m. - 9.00 a.m.	Registration & Breakfast
	9.00 a.m. - 9.15 a.m.	Briefing on workshop safety, rules & regulations
	9.15 a.m. - 1.00 p.m.	Chapter 1: Scientific Methodology
	1.00 p.m. - 2.00 p.m.	Lunch
	2.00 p.m. - 3.30 p.m.	Chapter 2: Cell as the Basic Unit of Life
	3.30 p.m. - 5.00 p.m.	Chapter 3: Coordination and Response

WORKSHOP 2		
DATE	TIME	ITENARY
18/05/2019	8.30 a.m. - 9.00 a.m.	Registration & Breakfast
	9.00 a.m. - 9.15 a.m.	Briefing on workshop safety, rules & regulations
	9.15 a.m. - 12.00 p.m.	Chapter 4: Reproduction
	12.00 p.m. - 1.00 p.m.	Chapter 5: Matter
	1.30 p.m. - 2.30 p.m.	Lunch
	2.30 p.m. - 3.30 p.m.	Chapter 5: Matter
	3.30 p.m. - 5.00 p.m.	Chapter 6: Periodic Table

WORKSHOP 3		
DATE	TIME	ITENARY
05/05/2018	8.30 a.m. - 9.00 a.m.	Registration & Breakfast
	9.00 a.m. - 1.00 p.m.	Chapter 7: Air
	1.00 p.m. - 2.00 p.m.	Lunch
	2.00 p.m. - 3.30 p.m.	Chapter 8: Light and Optics
	3.30 p.m. - 5.00 p.m.	Chapter 9: Earth
	5.00 p.m. - 5.30 p.m.	Closing Ceremony

WORKSHOP EVALUATION

At the end of each workshop, survey forms were distributed to the participants to get their feedback on the workshops. This was done so that we can further improve the training in the coming years. In the form, they were asked to give feedback on the presentations, trainers and their overall rating of the workshop.

DAY 1

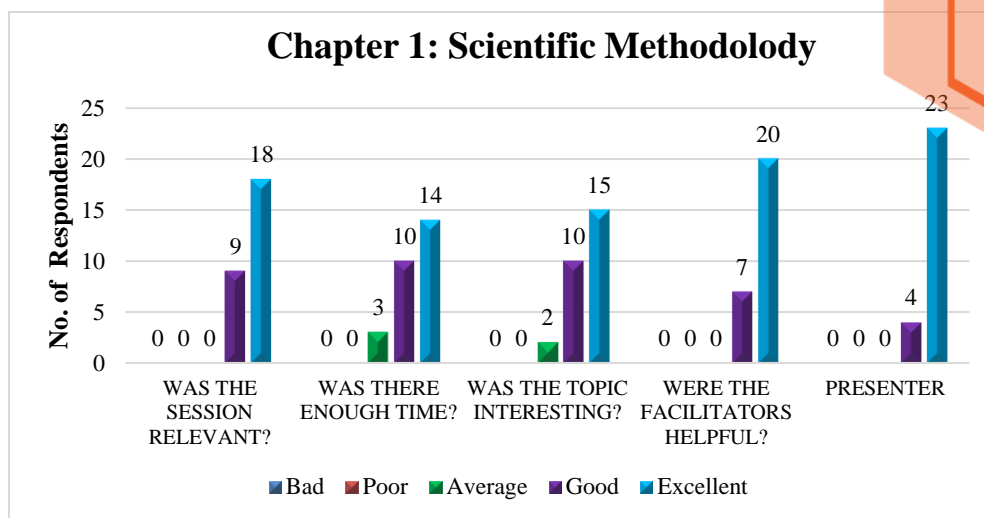


Figure 1: Chapter 1-Scientific Methodology

Figure 1 shows the module for Chapter 1 was generally well received. However, there were some who felt more time could have been allocated to this session.

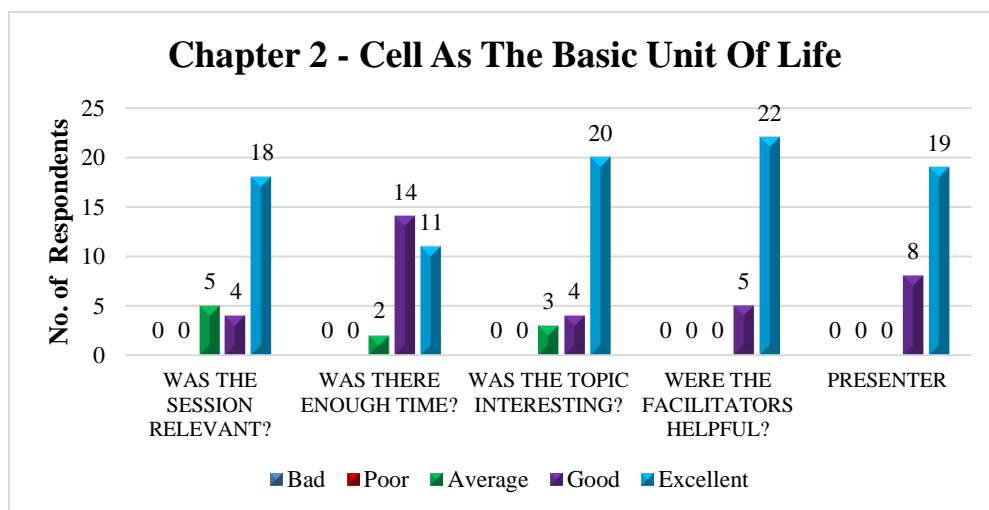


Figure 2: Chapter 2-Cell as the Basic Unit of Life

Figure 2 shows majority of the participants found Chapter 2 module to be either excellent across all the aspects with a few of the participants rating it as average.

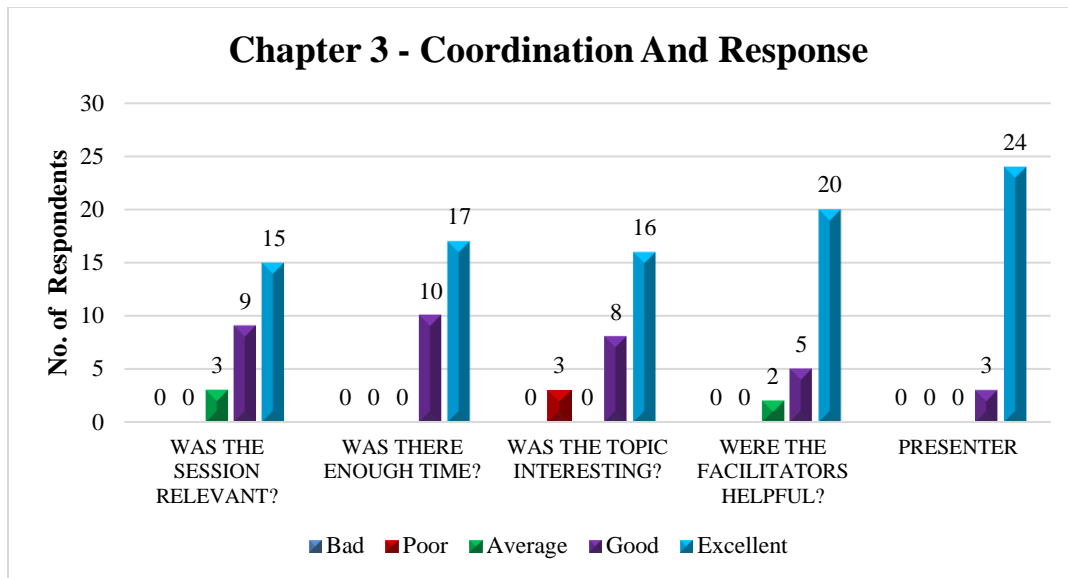


Figure 3: Chapter 3-Coordination and Response

Figure 3 shows majority of the participants rated all the aspects of this module session as excellent and good with a small fraction rating as average and poor in some aspects.

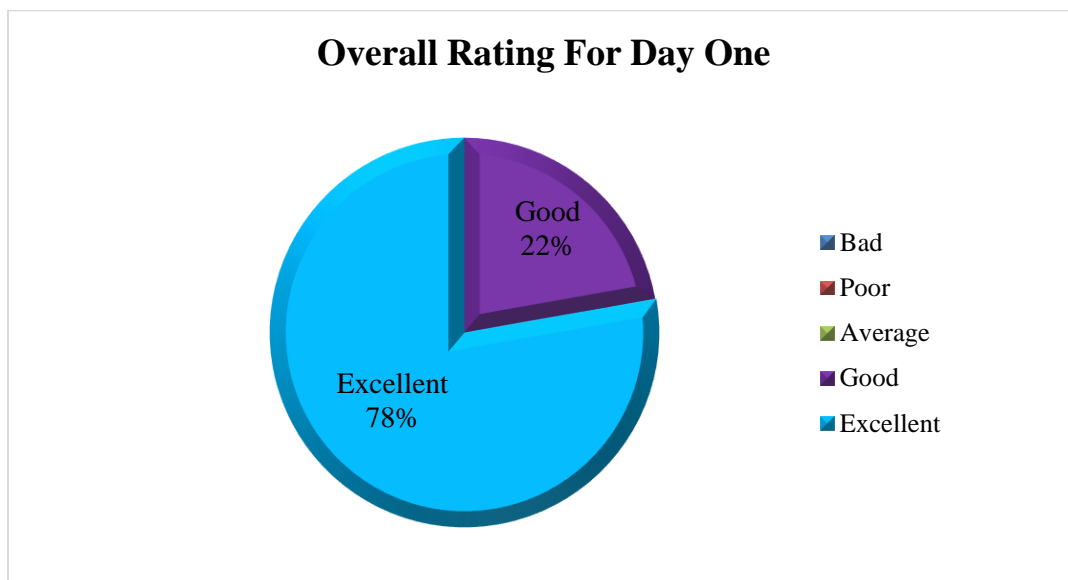


Figure 4: Overall Rating for Day One

Figure 4 is on the overall rating for Day 1. Most participants rated Day One as excellent and good.

DAY 2

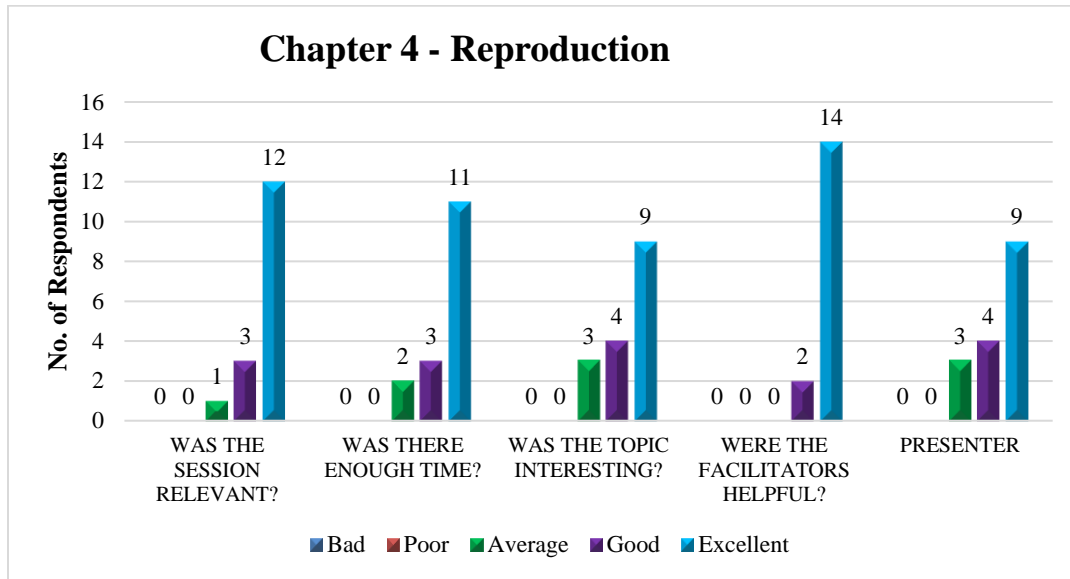


Figure 5: Chapter 4-Reproduction

Figure 5 explains, the ratings on the Chapter 4 module which was positive with a large number of participants finding the session to be excellent in all aspects on the survey.

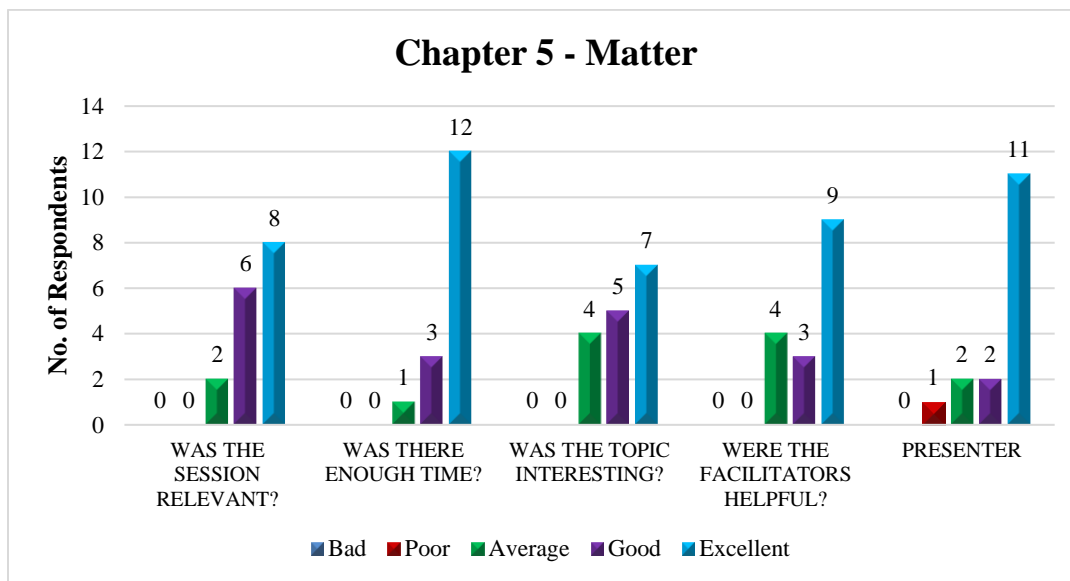


Figure 6: Chapter 5-Matter

Figure 6 shows, once again a majority of the participants rated excellent and good for all aspects of this module with a small number rating as average and poor in some aspects.

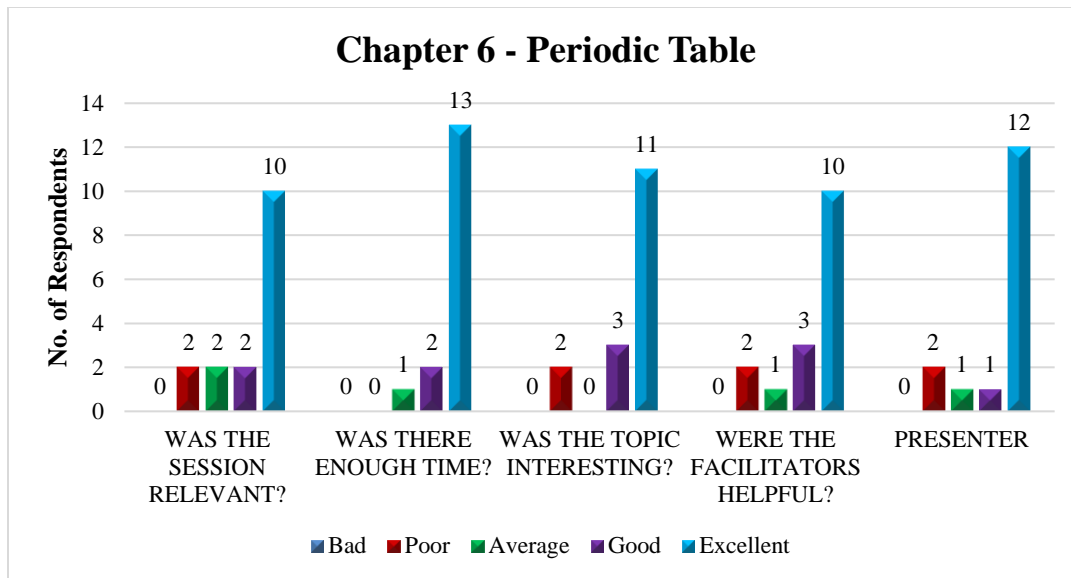


Figure 7: Chapter 6-Periodic Table

Figure 7 demonstrates, a majority of the participants rated excellent and good for the Chapter 6 module with a small number rating it as poor and average in some of the aspects.

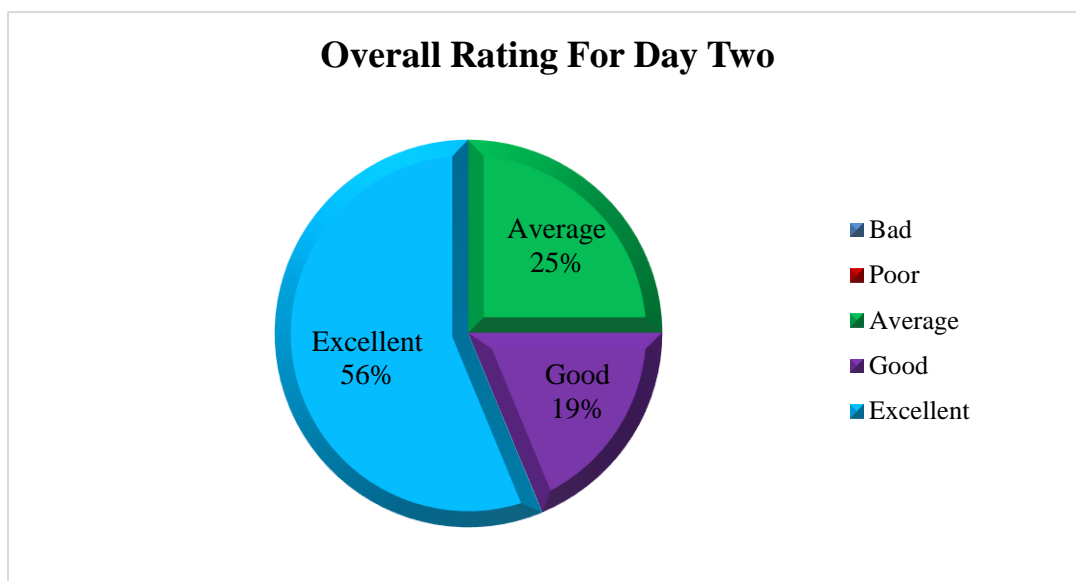


Figure 8: Overall Rating for Day Two

Figure 8 shows the overall rating for Day 2. Most participants gave a rating of excellent, good and average.

DAY 3

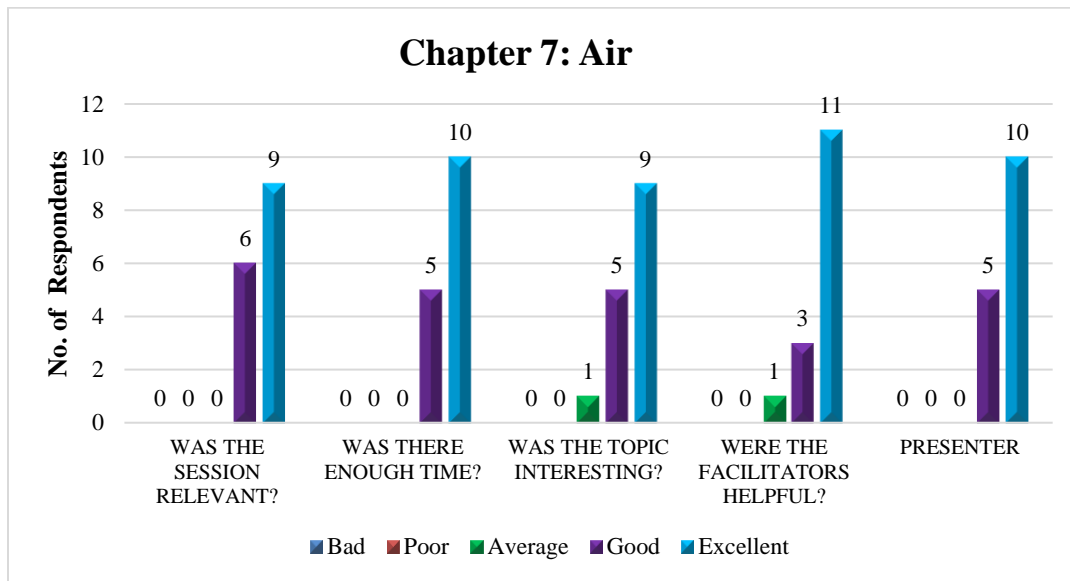


Figure 9: Chapter 7-Air

Figure 9 shows, majority of the participants found Chapter 7-Air module to be either excellent or good across all the aspects with a minority finding it simply average.

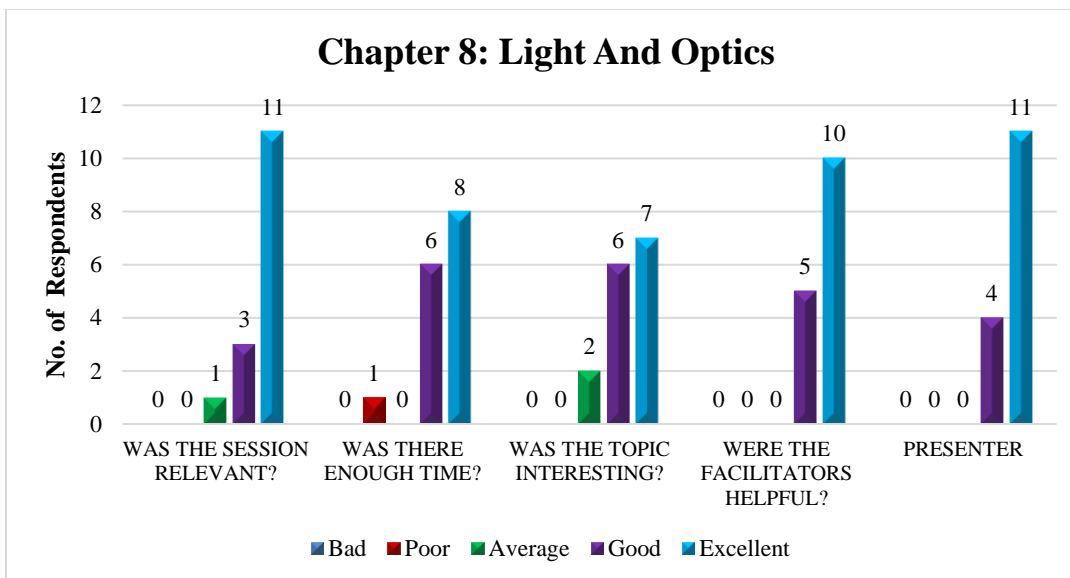


Figure 9: Chapter 8-Light and Optics

Figure 9 explains that most of the participants felt the Chapter 8-Light and Optics module was excellent across all the aspects. However, there were a few students who found the session to be average and poor in some of the aspects.

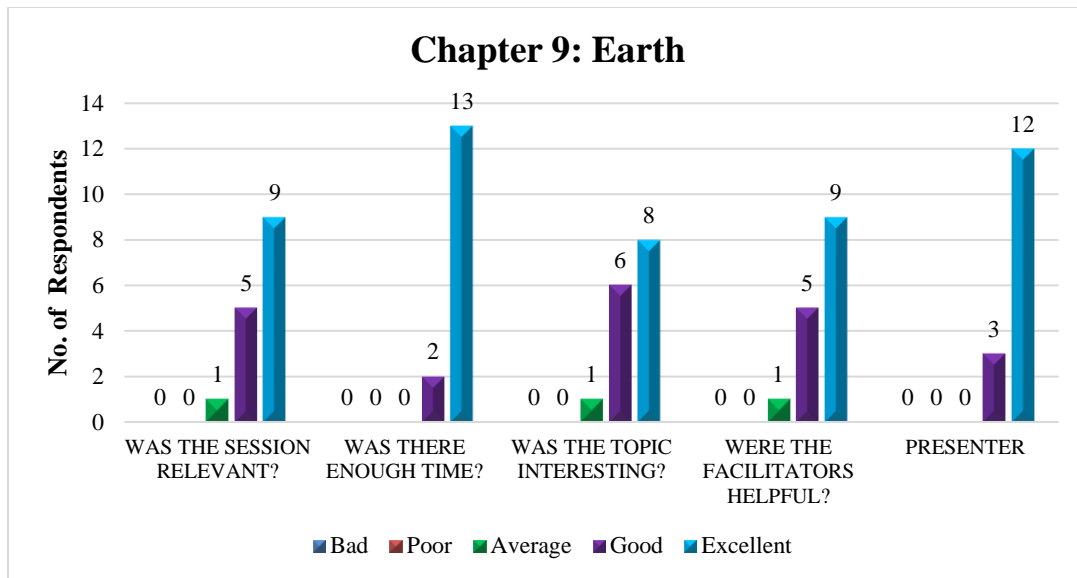


Figure 10: Chapter 9-Earth

Figure 10 reveals that a majority of the participants rated good and excellent for all the aspects in the Chapter 9-Earth module with a small number rating average.

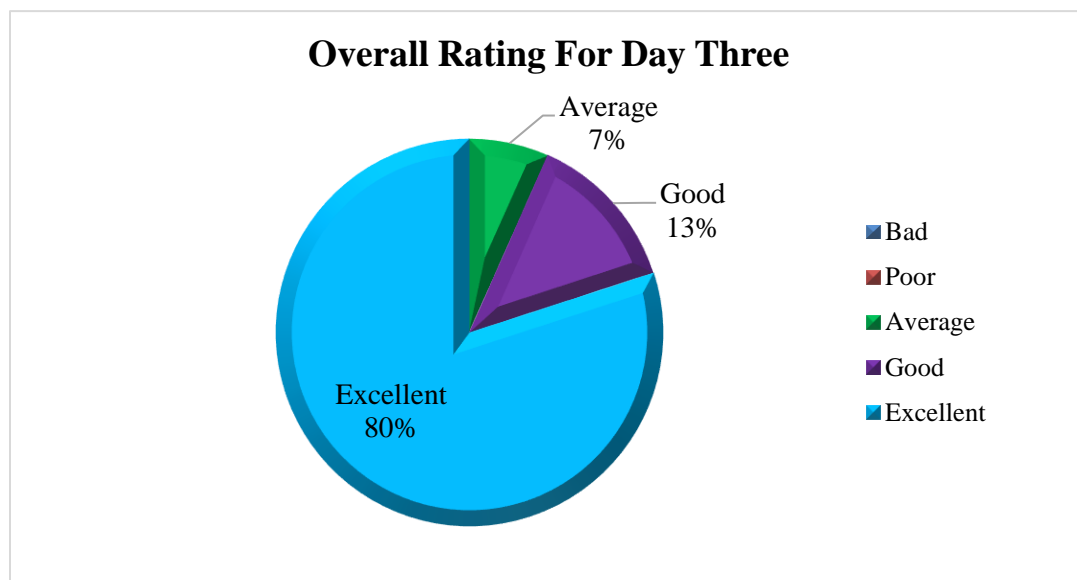


Figure 11: Overall Rating for Day Three

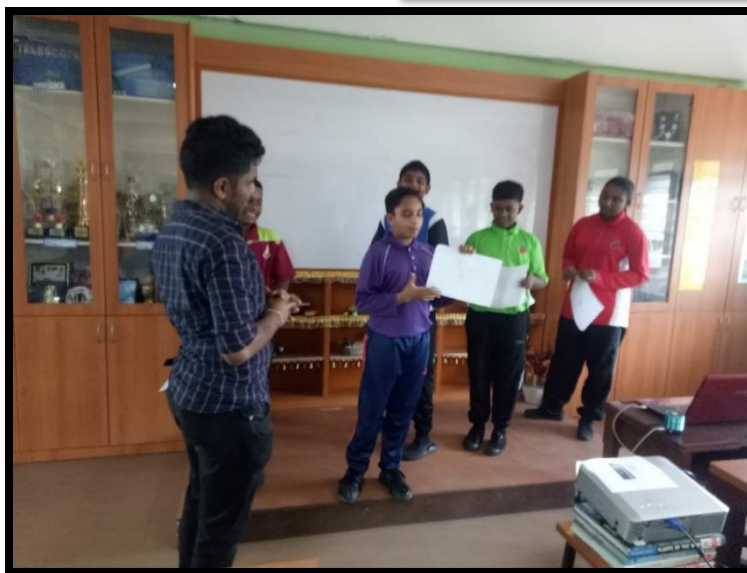
Figure 11 is on the overall rating for Day 3. Most participants gave a rating of excellent and good and thus can be said to be satisfied.

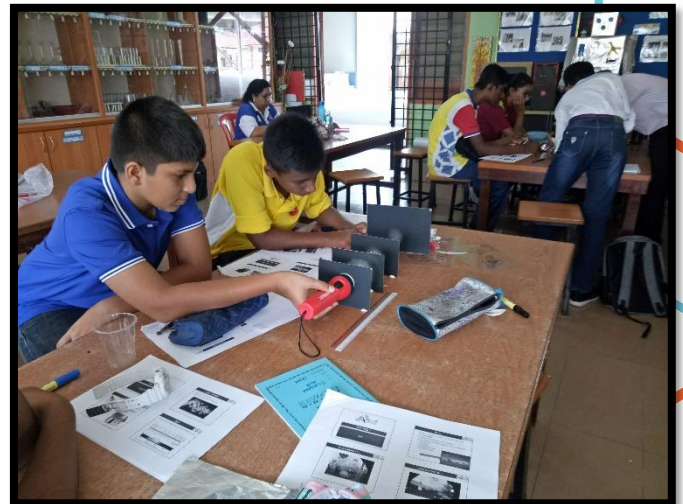
CONCLUSION

A-PLUS workshops enable us to empower our young students to think on their own and develop higher order thinking capacities. It has become a way to equip them further and to ensure their excellence as they progress on to higher studies and the working world.

On behalf of ASTI, we want to extend our heartfelt gratitude to the parents of our participants without which this venture would not be possible.

We hope in years to come we will reach more students and achieve greater heights in our project that the students can achieve more in their education. We will be a part for their success and bring them to a quality life.







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