



# REPORT 2020





**REPORT**  
2020



## ASTI Feynman Challenge 2020 Report

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# OUR HEARTFELT THANKS!



Ministry of Education (MOE),  
Malaysia

Dato' Tharuma Rajah

Mr. Hariharan Naidu

Headmasters/Headmistress

Teachers

Parents

Students

And

To all the Judges



# EXECUTIVE SUMMARY

The Association of Science, Technology and Innovation (ASTI), a non-governmental organization (NGO) created, designed and completed a project called the ASTI Feynman Challenge (AFC) during the Covid-19 Lockdown. The project is in line with ASTI's view that learning should never stop, no matter what the circumstances.

This project is an on-line competition which was open to all communities in the world. With a minimum of 2 persons per team, the project requires the participants to invent a teaching tool to explain a scientific principle of their choosing, using "day-to-day" objects at home. The scientific principle using the invention must then be explained and recorded in a video and must be uploaded on YouTube. The video can be recorded with a smart phone and must be less than 5 minutes long. The learning principle used for this project is the Feynman Technique. The technique says that the best way to learn is to teach in a way that is easy to understand.

The challenge was divided into 3 categories, based on their age level and the first, second and third place for each category were given prizes. There were also 4 inclusivity awards for teams which may not have fulfilled all the criteria of AFC but had some special feature which deserved recognition.

Once the funding had been confirmed, the poster for this challenge was developed in both English and Bahasa

Malaysia. ASTI Feynman Challenge was funded by a few individual sponsors.

ASTI also established the Terms and Conditions and developed 7 Modules as guidelines for the AFC participants. These modules included among others; the introduction to Feynman Technique, steps to upload video on YouTube and many more.

After the poster and modules were developed, ASTI created a special webpage containing all the information regarding the AFC. The poster was promoted and published on ASTI's webpage starting 8 April 2020. At first, the participants' registration deadline was set on 20 April 2020. The responses we received were overwhelming and there were many requests for the extension of the registration deadline. Considering all options, ASTI complied with the requests and set a new registration deadline which was on the 30th of April 2020. A total of 650 teams registered.

The final video submission deadline was set for the 5th of June 2020. We received a total of 318 videos with different types of scientific principles and concepts being explained.

AFC had about 96 judges who volunteered for judging. ASTI also established a judging panel to develop the judging policies and oversee the judging process. The judges were from academia and industry. The judges used a special rubric prepared by the AFC judging panel for video marking.

A total of 10 judges were also chosen randomly to do a trial run to test this rubric on the 2nd of June 2020.

The test run was a success with minor recommendations. This rubric was adopted as the official judging rubric with minor modifications as per the recommendations.

After the judging score sheet was finalised, judges were given about two weeks to mark the videos. In order to determine the winners, the videos were sent online to at least 2 judges for judging. The results were cross referenced. If the difference in marks were too great, the video was sent to a third judge for evaluation.

The final top videos selected based on the marks were then viewed together at the ASTI office by 6 panel judges to verify and finalise the results for all categories including the inclusivity awards. The winners were announced on the 30th of July 2020 in a virtual prize giving ceremony. The Minister of Science Technology and Innovation, YB Khairy Jamaluddin gave a special address during the virtual event. For future improvement to the project, ASTI conducted a survey via google form link for all the participants to get their feedback. There were 10 questions and their responses are illustrated in the graphs in this report.

AFC was a great success. The response was overwhelming as the promotion of the project reached out to more than 5 countries and it was regarded as ASTI's project with the highest participation registration to date. Thus, we believe that during the Covid-19 Lockdown, many families had the opportunity to work in a team to produce a meaningful learning journey. In the words of Rumi "As you start to walk on the way, the way appears", ASTI now believes that any circumstances also provides many opportunities, and that learning is always possible – in fact learning can be enhanced during times of trials.

# INTRODUCTION

ASTI is a not-for-profit, non-governmental organization (NGO) with the objectives of empowering young children through various science-based and, skills-development projects such as Science Fair for Young Children (SFYC), Young Inventors Challenge (YIC), Creative and Critical Thinking Camp/Workshops (CCT), ASTI Leap Challenge (ALC), A-PLUS Programme and also, a teacher training programme, On the Wings of Fire Series, in which we help build the teaching community's confidence through new teaching methodologies that is much-needed in today's fast-changing world. We also conduct various outreach programmes throughout the year to augment our science-related educational goals.

ASTI Feynman Challenge is a project designed in the times of the Covid-19 Lockdown. We conducted this competition on-line for all communities which includes families, refugees, orphanages, etc. We believe that the learning process should never stop no matter what the circumstances. As Eric Hoffer said "In a time of drastic change it is the learners who inherit the future, The learner usually find themselves equipped to live in a world that no longer exist".

ASTI Feynman Challenge is an online challenge where the students work as a team, minimum 2 person per team. The teams can be made up of parent and children, brothers and sisters, friends and study buddies. The team does not need to be living together and may communicate via online platforms such as zoom etc.

The team is to invent something with a scientific principle that they have learnt in school. The invention should be with day to day objects they would find at home. For example, they can design a catapult with clips and rubber bands. The team must then video tape their explanation of the scientific concept with the invention they had developed.

So in summary, the "invention" is basically a teaching tool. Each video should be not more than 5 minutes long which is to be uploaded into a YouTube channel. The video can be recorded using mobile phones. We were not concern with the quality of the videos as long as the voices were clear and the qualities of the images are discernible. Our main focus was the clarity of the explanation and the quality of their teaching tool.



The learning principle or pedagogy of AFC is based on the Feynman Technique which can be summarised in 4 simple steps:

1. *Choose a concept you want to learn about*
2. *Pretend you are teaching it to very young learners*
3. *Identify gaps in your explanation; go back to the source material, to better understand it*
4. *Review and simplify.*

In AFC, ASTI has added another step between steps 1 and 2 which is; STEP 1.5. Invent the teaching tool to teach the concept.

There are 2 types of knowledge; knowing something and knowing the names of something. The Feynman technique focusses on learning to know something. Thus learning and understanding the scientific concept is integral compared to just memorising the facts. The Feynman technique also assumes that the best way to learn a scientific concept is to explain it to another person in a simple way for any layman to understand. For one to be able to do that, the person has to have a deep understanding of the concept they are teaching.



*“The person who says he knows what he thinks but cannot express it usually does not know what he thinks”*

*- Mortimer Adler*



# Methodology and Timeline

ASTI organized this program during the Covid-19 lockdown period. It is an adapted model of some of the programmes ASTI already runs, taking into consideration the problems we were facing during the full lockdown.

We divided the challenge into 3 categories according to age as below:

*Category 1 : Average Age of 6-13*

*Category 2 : Average Age of 14-19*

*Category 3 : Above 20*

We decided to give prizes for each category above as follows:

**First prize : RM1000**

**Second Prize : RM 500**

**Third Prize : RM300**

We also announced 4 special inclusivity Award to the teams that managed to do their video against overwhelming odds, each can be about RM500.

We developed the Implementation Process and steps as listed below:

1. Project Development and Financing
2. Poster, Module and Webpage Development
3. Promotion via Poster and Video
4. Participants Registration
5. Video Preparation by participants
6. Video Submission by participants
7. Video marking and finalising the winners
8. Winners announcement
9. Distribution of Certificates and Prizes

The implementation timeline were as follows:

Date	Activity
1 April 2020	Project Design, Proposal development and Source Funding
2 April 2020	Logo Design
3 - 6 April 2020	Poster Design and Modules Development
8 April 2020	Webpage Creation and Publish the Poster and Modules Promotion via YouTube Video
30 April 2020	Registration Submission Deadline
5 June 2020	Video Submission Deadline
12 - 25 June 2020	Video Marking by Judges
25 June 2020-10 July 2020	Finalize Winning Teams for all 3 categories and Special Inclusivity Award
30 July 2020	Announcement of The Winners
31 August 2020	Distribution of Winning Prizes and E Certificates

**Table 1:** Implementation timeline

# 2 Summary of Implementation

## Project Development and Financing

The project idea was initiated and developed by the President of ASTI, Dr. Mohamed Yunus Yasin during the Covid-19 Lockdown period and schools closure. The detailed proposal and budget was outlined and completed in two days. Then he started to source for funding support for the project implementation. Considering the short time period, the project was designed to be completed with minimal funding requirements. ASTI felt that there was an urgent need to fill the vacuum created in the person learning process during the lockdown.

## Publicity Poster Development

Once the funding was confirmed, we started to work on the development of Publicity Poster. The content for the publicity poster was developed, proofread and send to the designer to produce the poster. Upon the request from former Minister of Education, YB Dr Maszlee Bin Malik, the poster was also translated into Bahasa Malaysia. ASTI also decided to allow the video submissions to be in all 4 languages; English, Bahasa Malaysia, Mandarin and Tamil. The replica of both English and Bahasa Malaysia poster is as per image below:

**ASTI Feynman Challenge**

**CHANCES TO WIN**  
1st prize: RM1000  
2nd prize: RM500  
3rd prize: RM300

**Categories:**  
Category 1: 6-13 years old  
Category 2: 14-19 years old  
Category 3: 20 years and above

**IMPORTANT DEADLINES TO REMEMBER:**  
20 April 2020 - Registration Submission  
20 May 2020 - Video Submission  
20 June 2020 - Winners Announcement

**TO REGISTER:**  
Please use the QR Code here, or go to the website link below, where you can download the ASTI Terms & Conditions and Modules.

**www.asti.org.my/afc2020/**

**ASTI Feynman Challenge**

**UNTUK DIMENANGI**  
Hadiah Pertama: RM1000  
Hadiah Kedua: RM500  
Hadiah Ketiga: RM300

**Kategori:**  
Kategori 1: 6-13 tahun  
Kategori 2: 14-19 tahun  
Kategori 3: 20 tahun ke atas

**TARIKH-TARIKH AKHIR YANG PENTING:**  
20 April 2020 - Pendaftaran  
20 Mei 2020 - Penghantaran Video  
20 Jun 2020 - Pengumuman Pemenang

**PENDAFTARAN:**  
Penalet boleh mendaftar dan memuat turun terma, syarat dan syarat, terma dan syarat di laman web seperti berikut:

**www.asti.org.my/afc2020/**

## Module Development

The Association of Science Technology and Innovation also developed Terms and Conditions and 7 Modules as a guideline for the participants. The lists are as stated below:

- **Terms and Conditions**

<https://drive.google.com/file/d/19AVgZp00FtnkSOwZrbdigtIDPjBXG8Uc/view?usp=sharing>

*Objective:*

The objectives of this terms and conditions are to outline the rules and regulations about the competition and all the requirements that need to be fulfilled by the participants.

- **Module 1 : How To Do A Video and Work With Your Child In a Meaningful Way**

[https://drive.google.com/file/d/1QGv1S\\_FiMwIE3HA7GugqnZCH6wRIgleQ/view?usp=sharing](https://drive.google.com/file/d/1QGv1S_FiMwIE3HA7GugqnZCH6wRIgleQ/view?usp=sharing)

*Objective of the Module:*

The objective of this module is to give the participant an idea of how to do their video. It is also intended to be a catalyst for the participants to start exploring the internet to get ideas for their project. In part 2 of this module, there is a simple guideline on how parents can work together with their children in a meaningful way.

- **Module 2 : What is the Feynman Technique**

[https://drive.google.com/file/d/11FnXFSwWQt\\_NID80TFJuB9XLxPz9qVyq/view?usp=sharing](https://drive.google.com/file/d/11FnXFSwWQt_NID80TFJuB9XLxPz9qVyq/view?usp=sharing)

*Objective of the Module:*

The objective of this module is to introduce the Feynman Technique for learning.

- **Module 3 : Teaching Method and Developing a Lesson**

<https://drive.google.com/file/d/1CCJZXFMog9shjfg0AbJCQcRCcQ8ygzaQ/view?usp=sharing>

*Objective of the Module:*

AFC is a programme where parents or older siblings etc. will probably work with their younger learner on a project. This module is prepared to make the process of teaching or facilitating better and more effective for the non-teacher facilitator (like the parent, elder brother, guardian etc). It also helps contextualise what have been learnt to be applicable in the real world using all relevant learning style for the learner.

Since in AFC, participants are developing an invention and teaching with it – this module would also help the participants to develop their teaching method when designing the video presentation to be submitted to ASTI.

Teaching method and developing a lesson module aims to:

1. *Identify characteristics of learners*
2. *Accommodate various learning styles*
3. *Conducting the demonstration and explanation using appropriate skills*
4. *Identify and apply effective teaching strategies effectively*

Given information in this module, the students will be able to begin to demonstrate a teaching, demonstrations, experiments, practical exercises and integrate a student-centered classroom (or “virtual classroom”). This module is designed with a broader objective than what is needed directly for AFC. We included it for the future non-teacher facilitators so they may be more involved in their kids/ teams education process.

- **Module 4 : Project Management and Planning**

<https://drive.google.com/file/d/1gQQ7ut3UF9WT-rgHGjHsEcSokTGdJHxa/view?usp=sharing>

*Objective of the Module:*

The objective of this module is:

- *To understand what is a project*
- *To understand project based learning*
- *To understand the different phase and some of the processes involved in a project*
- *To help develop a project.*

- **Module 5 : How to upload video in YouTube and Video Submission Guideline**

<https://drive.google.com/file/d/1Xd5NLNYUIwZ1P3O9UJ1GVKcaRPZxx2gj/view?usp=sharing>

*Objective of the Module:*

The objective of this module is:

- *To understand steps to upload a video in YouTube through mobile app*
- *To understand steps to upload a video in YouTube through computer*
- *To understand the Video Submission procedures*

- **Module 6 : What is Invention?**

<https://drive.google.com/file/d/1cFrwTMxze5u1eIJbmJ72nm9fSs0VIHbK/view?usp=sharing>

*Objective of the Module:*

The objective of this module is:

- *To Introduce the concept of invention or innovation*
- *To highlight the fact that an invention or innovation can be very simple*

- **Module 7 : Judging Criteria**

<https://drive.google.com/file/d/1Jv0UZxuhB0mKoaz32ru86O9DFZQmb-8w/view?usp=sharing>

*Objective of the Module:*

The objective of this module is:

- *To give guidelines for participants on the judging criteria for AFC.*

## Webpage Development

Upon completion of the Poster and Module development, a webpage containing all this information was created at the ASTI's website. The webpage is available at the link: <https://www.asti.org.my/afc2020/>. The webpage contained the following items:

1. *Introduction to ASTI Feynman Challenge*
2. *Timeline of ASTI Feynman Challenge*
3. *Poster in English and Bahasa Malaysia*
4. *Press Note of ASTI Feynman Challenge*
5. *Explanation Video of ASTI Feynman Challenge*
6. *Registration for ASTI Feynman Challenge*
7. *Terms and Condition of ASTI Feynman Challenge*
8. *Modules of ASTI Feynman Challenge*
9. *Video Submission of ASTI Feynman Challenge*
10. *Summary of ASTI Feynman Challenge*

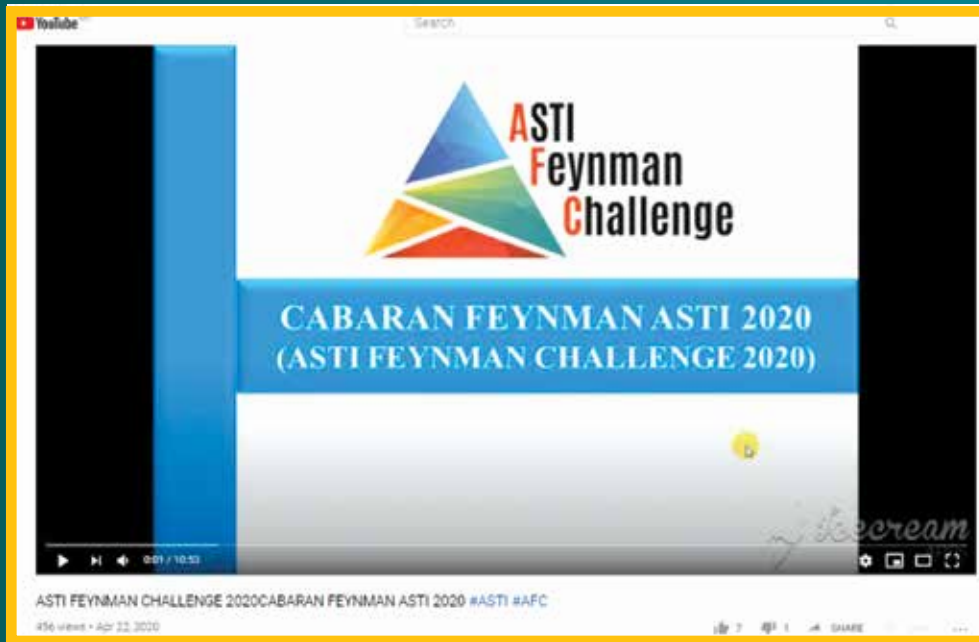
## Promotion via Poster and Video

The promotion via poster started on 8 April 2020. The poster was published at ASTI's webpage, Facebook page and Instagram page. The poster was also sent out to all the teachers and other important contact through WhatsApp broadcasting. Besides that, the materials were also emailed to all the schools and teachers who have participated in ASTI's projects such as Science Fair for Young Children, Young Inventors Challenge, Creative and Critical Thinking Camp/Workshop, ASTI Leap Challenge and others. ASTI also sent the project details to the Co-curriculum Division of the Ministry of Education for approval. They approved the project and helped sent out the materials to all the state education departments.

Moreover, Mr. Mahadewan Muniandy, ASTI's Northern Coordinator has conducted an online workshop through YouTube Channel to explain about ASTI Feynman Challenge on the 15 April 2020 from 8.00pm to 9.00pm. Additionally Mr. Maran Chanthiran, who is also in ASTI's Northern Region team recorded the video explanation in Malay and the video was published on the 22 April 2020 at YouTube Channel.







## Participants Registration

At the initial stage, the participants' registration deadline was set on 20 April 2020. Due to overwhelming response and request for extension of registration date, the registration deadline was extended to 30 April 2020. As of 30 April 2020, we had 650 teams registered to take part in the competition. The participants' registration breakdown according to category is as shown in the table below:

No	Category	Teams
1	Category 1: Average Age of 6-13	440
2	Category 2: Average Age of 14-19	132
3	Category 3: Above 20	78
Total		650

**Table 2:** Participants' Registration breakdown according to category

The participants' registration breakdown according to country is shown in the table below:

No	Country	Teams
1	Malaysia	631
2	Canada	1
3	India	9
4	Thailand	1
5	Tunisia	1
6	Singapore	6
7	New Zealand	1
Total		650

**Table 3:** Participants' Registration Breakdown According To Country

## Video Preparation by Participants

The participants were given time from 30th April 2020 to 30th May 2020 to develop their video with their teaching tool to explain their chosen scientific principle. Then again due to many request, the deadline for video submission was also extended until 5 June 2020. Considering the lockdown and all the complication due to it, we decided to be more forgiving in this regards.

## Video Submission by Participants

As of 5th June 2020, we had received a total of 318 videos of various scientific principles and concepts. The participants were requested to upload their video in their own YouTube channel and submit the link to ASTI via the video submission google form link. The breakdown of video submission according to category is as shown in the table below:

No	Category	Teams
1	Category 1: Average Age of 6-13	215
2	Category 2: Average Age of 14-19	64
3	Category 3: Above 20	39
Total		318

**Table 4:** Video Submission According To Category

The video submission breakdown according to country is shown in the table below:

No	Country	Teams
1	Malaysia	310
2	India	3
3	Singapore	5
Total		318

**Table 5:** Video Submission According To Country

## Video Marking and Finalising the Winners

The compiled videos were sent to judges for marking from 12 June 2020 to 25 June 2020. We had a total of 96 judges from academia and industry. Each video was marked by two different judges and the average marks were calculated. If the marks variation between Judge 1 and Judge 2 was more than 15 marks, that particular video was sent for third marking to reduce the variance. All the marks were compiled and analysed to determine the winners.

The top 5 videos from each category were selected and a special judging panel meeting made up of 6 judges was held to verify the result and sign-off on the winners.



## Winners Announcement

The Association of Science Technology and Innovation announced the winners of AFC on the 30 July 2020 through virtual prize giving ceremony via Facebook live. This was ASTI's first attempt at running such an event. The poster of the Virtual Prize Giving Ceremony is as shown below:



## Category 1: Average Age 6-13

The list of winners for category 1 is shown in the table below:

	Team Name	Participants' Name	Scientific Concept
Champion	Creative team/ Creative	Joshina A/P Stalin Fernandez	Air Pressure
		Kavissri A/P Kumar	
		Maleena Thancy Michael	
		Swasthikaa A/P Nagaraju	
		Manisha A/P Murugan	
1st Runner Up	Magnetic Trio 1	Chloe Tan Hui Ching	Sound & Vibration
		Thriesshaa A/P Subramaniam	
		Khirthysvary A/P M. Raman	
2nd Runner Up	JJSRI	Jisznu Moganadass	Earthquake
		Jivan Moganadass	
		Sridaar Moganadass	

**Table 6:** Category 1 - Average Age 6-13



**Champion : Creative team**



**1st Runner up :  
Magnetic Trio 1**



**2nd Runner up :  
JJSRI**

## Category 2: Average Age 14-19

The list of winners for category 2 is shown in the table below:

	Team Name	Participants' Name	Scientific Concept
Champion	Chillax	Yong Saan Cern	Sound Waves
		Yeoh Sheng Ze	
1st Runner Up	Nature and Science	Laveenashree Manyvannan	Cohesive & Adhesive Force
		Ravin Daaren Manyvannan	
2nd Runner Up	AJ Smart Science	Ashvin Joshua	Newton's Third Law
		Arvin Joshua	

**Table 7:** Category 2 - Average Age 14-19



**Champion : Chillax**



**1st Runner up :  
Nature and Science**



**2nd Runner up :  
AJ Smart Science**

### Category 3: Above 20

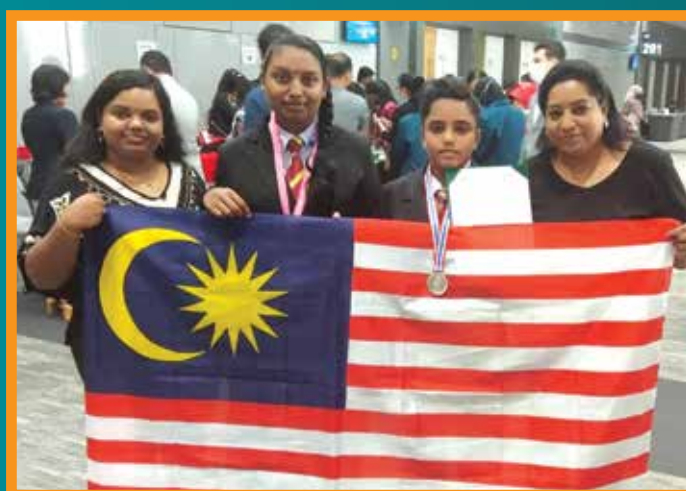
The list of winners for category 3 is shown in the table below:

	Team Name	Participants' Name	Scientific Concept
Champion	The_TANs	Tan Mun Wai	Archimedes Principle
		Tan Keng Kheong	
		Tan Keen Wai	
1st Runner Up	LDS Fun Learning Production	Dharisinee A/P Jegathisan	Water Cycle
		Loga Dharrsen A/L Jegathisan	
		Samyukthasshree A/P Narayanan	
2nd Runner Up	ALPHA	Saraswathy Munian	Pain Reflex
		Nur Farhana Athirah Binti Azhari	
		Harliza Binti Haris	
		Azhari Bin Ahmad@Salleh	

**Table 8:** Category 3 - Above 20



**Champion : The\_TANs**



**1st Runner up :  
LDS Fun Learning Production**



**2nd Runner up :  
ALPHA**



## Special Inclusivity Awards:

Special Inclusivity Award 1, 2 and 3 is for three teams with Extraordinary Video which were selected by the Judging Panel. The list of winners are shown in the table below:

Special Inclusivity Award 4 is for the team with highest likes on YouTube or Facebook or both (the addition of both likes) for their Video. The list of winner is shown in the table below:

	Team Name	Participants' Name	Scientific Concept
Script & Storyline	IPTEK/UniXBCol	Roziah Anuar	Units Conversion
		Bushra Limuna Ismail	
		Muhammad Zulnaqib Bin Zuhar	
		Mohd Aiman Hazim Bin Roaini	
Advanced Knowledge	Gamma/SST3	Wu Wanghong	The Intermediate Axis Theorem
		Waiz Zul'mateen	
		Tay Yu Jie	
Video & Explanation	eaTary	Ong Ee Xuen	Food Pyramid
		Ong Joon Zach	
Video With Most Facebook Likes	Nicola/JANAKI AMMAL TEAM	Sharchana Thiru Arasu	Shadow
		Nhiveshana Thiru Arasu	
		Yarthisshana Thiru Arasu	

**Table 9:** Special Inclusivity Awards

# 3 List of Participants

The list below shows the details of 318 teams who have successfully submitted their videos and completed the participation for ASTI Feynman Challenge 2020.

## Category 1: Average Age 6-13

No	Country	School Name
1	India	#DIY Arjun/Arjun Mlzs5thgrade
2	India	Team Kalam
3	Malaysia	6S Scientists
4	Malaysia	A+S Tists
5	Malaysia	Abdul Kalam
6	Malaysia	Abdul Kalam (Johor) 1
7	Malaysia	Abdul Kalam 2
8	Malaysia	AFC2020_ Born To Win/Sis Bro
9	Malaysia	AFC2020_vetri
10	Malaysia	AFC2020_vetri Namathe
11	Malaysia	AFC2020_vivegam
12	Malaysia	Agni 1
13	Malaysia	Agni 2
14	Malaysia	Albert Einstein
15	Malaysia	ASTIFeynman Challenge 2020 Team Unity
16	Malaysia	Atomicbuzz/Hibiscus Flower As An Indicator And Litmus
17	Malaysia	Baby Girl/Neer Semippom
18	Malaysia	Be The Changer
19	Malaysia	Best Creators/Best Creators Afc 2020
20	Malaysia	Biocousins
21	Malaysia	Born To Win
22	Malaysia	Budak-Budak Tanjung Rambutan
23	Malaysia	C.V.Raman
24	Malaysia	Champion Brothers 2020/Champion Brothers
25	Malaysia	Chin Family

No	Country	School Name
26	Malaysia	Covid Avengers
27	Malaysia	Crazy Scientist
28	Malaysia	Creative Team/Creative
29	Malaysia	Crystal Stars
30	Malaysia	CS2 Alpha/CS2 Chi Sheng
31	Malaysia	D Dr€@Mrz/D'dr@Merz
32	Malaysia	Deepz
33	Malaysia	DJ Shine Stars
34	Malaysia	Dnawasome
35	Malaysia	Dr.Y2k
36	Malaysia	Dream Catchers
37	Malaysia	Earth Orbitor
38	Malaysia	Earth Warriors (327)
39	Malaysia	Earth Warriors (441)
40	Malaysia	Easy Watch/Falatin's Clan
41	Malaysia	Eatary
42	Malaysia	Ecogirls
43	Malaysia	Energy Legends
44	Malaysia	Extreme Microbio
45	Malaysia	Fabulous Formula
46	Malaysia	Fes Serdang/AFC2020_Sound Siblings
47	Malaysia	Feynman King/KV Team
48	Malaysia	First Challenge RN Team
49	Malaysia	Flower Kids
50	Malaysia	Force (Gravity/
51	Malaysia	Frozenxin
52	Malaysia	Futuristic Scientist/Shooting Stars
53	Malaysia	Gayatech Boys
54	Malaysia	Ghaana Team/Ghana Team
55	Malaysia	Go 2020/The Zainol's
56	Malaysia	Go Getters
57	Malaysia	Golden Comets
58	Malaysia	Grace Light
59	Malaysia	Green Warriors/V R Science Geeks
60	Malaysia	Hamaliswree D/O Raghupathy
61	Malaysia	Home Made Hydro Turbine Power Generator/Hydro Team
62	Malaysia	Ihemesies

No	Country	School Name
63	Malaysia	Inno Asians
64	Malaysia	Inno Kateras
65	Malaysia	Innokids
66	Malaysia	Innovator/Gadong Team
67	Malaysia	Investigating Material (Sink And Float)/Matter (Density)
68	Malaysia	Issac Newton (491)
69	Malaysia	JJ Thompson
70	Malaysia	JJSRI
71	Malaysia	JSK
72	Malaysia	Junior Scientist 1
73	Malaysia	Junior Scientist 2/Future Scientist
74	Malaysia	Junior Scientist 3/3S Young Scientist
75	Malaysia	Kanniesh
76	Malaysia	Kids Power/Rushi
77	Malaysia	KIV 1
78	Malaysia	KIV 2/ (Avm Group Project)
79	Malaysia	KIV 3 /Shasta Team (KIV)
80	Malaysia	KIV 4/A.P.J Abdul Kalam
81	Malaysia	KIV 5/KIV(T&R Bros)
82	Malaysia	KIV 6
83	Malaysia	KIV 7/R&S Challenge
84	Malaysia	Kluster Sendayan
85	Malaysia	KN Family
86	Malaysia	Kousika Group
87	Malaysia	KVI /Kalavaiyai Kandariyum Thevathaigal
88	Malaysia	Lightbreakers/The Lightbreakers
89	Malaysia	Little Explorer (WP)
90	Malaysia	Little Inventor
91	Malaysia	Live Green
92	Malaysia	Liverpool
93	Malaysia	Logic Out Of Knowledge
94	Malaysia	Mad Scientist
95	Malaysia	Magnesia
96	Malaysia	Magnetic Trio 1
97	Malaysia	Magnetic Trio 2
98	Malaysia	Matter (Air Take Space)
99	Malaysia	Meikaanban



No	Country	School Name
100	Malaysia	Miracle
101	Malaysia	MSI Team
102	Malaysia	Msv Winners
103	Malaysia	My Family
104	Malaysia	Nemo/Anna And Elsa
105	Malaysia	Newton Girls/Power Girl
106	Malaysia	Newton Team / Kavipriti's Experiment
107	Malaysia	PBP Army
108	Malaysia	Pluto Commets/Commet Pluto
109	Malaysia	Power Team/Double A Team
110	Malaysia	Project.D
111	Malaysia	Rangers (The Rangers)
112	Malaysia	Rettai Val
113	Malaysia	Risha
114	Malaysia	Robot Team/Robot
115	Malaysia	Royalsatya
116	Malaysia	Rs Galileo
117	Malaysia	S & D
118	Malaysia	Saathanai Siragugal
119	Malaysia	Sairai
120	Malaysia	Sarkar
121	Malaysia	Sathia
122	Malaysia	Science Butterflies
123	Malaysia	Science Champions Squad
124	Malaysia	Science Furious
125	Malaysia	Science Is Everywhere
126	Malaysia	Science Musketeers
127	Malaysia	Science Stars
128	Malaysia	Science Team 1/Microcosm
129	Malaysia	Science Team 2/Solubility In Hot And Cold Water
130	Malaysia	Sharrvetha
131	Malaysia	Shining Stars
132	Malaysia	Shivam
133	Malaysia	Shri's Girlz (Shri's Girlz)
134	Malaysia	Shvan
135	Malaysia	Simple Solution
136	Malaysia	SIV

No	Country	School Name
137	Malaysia	SJKT Fletcher Team 11
138	Malaysia	SJKT Fletcher Team 12
139	Malaysia	SJKT Fletcher Team 15
140	Malaysia	SJKT Fletcher Team 16
141	Malaysia	SJKT Fletcher Team 17
142	Malaysia	SJKT Fletcher Team 18
143	Malaysia	SJKT Fletcher Team 19
144	Malaysia	SJKT Fletcher Team 2
145	Malaysia	SJKT Fletcher Team 20
146	Malaysia	SJKT Fletcher Team 4
147	Malaysia	SJKT Fletcher Team 6
148	Malaysia	SJKT Fletcher Team 7
149	Malaysia	SJKT Fletcher Team 8
150	Malaysia	SJKT Fletcher Team 9
151	Malaysia	SJKT Jalan Fletcher (Team 1)
152	Malaysia	SJKT Jalan Fletcher (Team 10)
153	Malaysia	SJKT Jalan Fletcher (Team 13)
154	Malaysia	SJKT Jalan Fletcher (Team 14)
155	Malaysia	SJKT Jalan Fletcher (Team 21)
156	Malaysia	SJKT Jalan Fletcher (Team 22)
157	Malaysia	SJKT Jalan Fletcher (Team 3)
158	Malaysia	SJKT Sungai Renggam Young Inventors
159	Malaysia	SK Group
160	Malaysia	Smarters
161	Malaysia	Smarty 1
162	Malaysia	Smarty 2
163	Malaysia	Smarty 3
164	Malaysia	Sollution Squad/Y S Champions
165	Malaysia	Solution Squad (Johor)
166	Malaysia	SPV
167	Malaysia	SSV Arivial Kandupidipu/Vss
168	Malaysia	SSV Brothers 1
169	Malaysia	SSV Brothers 2
170	Malaysia	Star Team/Star
171	Malaysia	Stars (Johor)
172	Malaysia	Stars/STSR Stars
173	Malaysia	Stsr Scientists/ADKT Bulldozer

No	Country	School Name
174	Malaysia	Success Team/Success
175	Malaysia	Sunflower
176	Malaysia	Super Girls 2020/DM Girls
177	Malaysia	Super Scientists
178	Malaysia	Suuriyan
179	Malaysia	Taman Permata Team/Amk Power
180	Malaysia	Tanushree/Tanushree Ganesan
181	Malaysia	Team Gamma
182	Malaysia	Team Raj
183	Malaysia	Team Shivaani And Tasvindkumar/Freedom 2020
184	Malaysia	Team Warriors
185	Malaysia	Technology ( Stability )
186	Malaysia	Tenby Superhero
187	Malaysia	The Kiwiz
188	Malaysia	The Little Brainies
189	Malaysia	The Maker Siblings/SA Creators
190	Malaysia	The RRV Team
191	Malaysia	The Unbeatable Brothers
192	Malaysia	The Young Inventors.
193	Malaysia	U & G / Flying Aquarius
194	Malaysia	Unicorn Team/The Unicorn Team
195	Malaysia	Unique Girl
196	Malaysia	United Brothers
197	Malaysia	Universal Atoms Junior
198	Malaysia	Unrusted Ideas
199	Malaysia	Vd@410
200	Malaysia	Veena Team/Veenasri
201	Malaysia	Velan/Laptop Lab
202	Malaysia	Vetri
203	Malaysia	Victory
204	Malaysia	Vimesh Suresh
205	Malaysia	Vinmeen
206	Malaysia	Visual Friends
207	Malaysia	We Are Great
208	Malaysia	We Are Makers
209	Malaysia	Win2feyn
210	Malaysia	Wonder of Yakshita/Yakshita

No	Country	School Name
211	Malaysia	Young Bumblebee
212	Malaysia	Young Creator/Fire Dragon
213	Malaysia	Young Scientist (401)/ Super Scientist
214	Malaysia	Yuki
215	Malaysia	Yuv08/Mohayuva Brothers

## Category 2: Average age 14-19

No	Country	School Name
1	Malaysia	2 Roses
2	Malaysia	3 Star Team
3	Malaysia	A.d.a.m/A-Dam
4	Malaysia	AJ Smart Science
5	Malaysia	Alpha Team (Wp)
6	Malaysia	ASTI Star 2020/Feynman Star 2020
7	Malaysia	Bros
8	Malaysia	Brothers
9	Malaysia	Chillax
10	Malaysia	Crazy Makers
11	Malaysia	Do The Rutine No Jokes Technique
12	Malaysia	Electromagnetists/The Electromagnetists
13	Malaysia	Enoteens
14	Malaysia	Felicity
15	Malaysia	Funky Monkeys
16	Malaysia	Gen Z <sup>2</sup>
17	Malaysia	Genius Scientist
18	Malaysia	H <sub>2</sub> O
19	Malaysia	I Square
20	Malaysia	Isaac Newton
21	Malaysia	Learning Dice
22	Malaysia	LX
23	Malaysia	Masters of Buoyancy
24	Malaysia	MKD Team
25	Malaysia	MSI Legacy
26	Malaysia	Nature and Science
27	Malaysia	Nebula/Team Nebula

No	Country	School Name
28	Malaysia	Newton's Team
29	Malaysia	Nicola/Janaki Ammal Team
30	Malaysia	One United
31	Malaysia	Rwab
32	Malaysia	Sah (Stay At Home, Science At Home)
33	Malaysia	Sas - (Serious About Science)
34	Malaysia	Science For Real /Science Is Real (Sir)
35	Malaysia	Science Whales
36	Malaysia	Scipp Legacy
37	Malaysia	Semereh
38	Malaysia	Shahwanni
39	Malaysia	Smkakanewton
40	Malaysia	Smsians
41	Malaysia	Solution Squad (Selangor)
42	Malaysia	Star Junior
43	Malaysia	Study It Yourself
44	Malaysia	Team Enigma
45	Malaysia	Team Macgyver
46	Malaysia	Tesla
47	Malaysia	The Ahmads
48	Malaysia	The Pretty Ones Are The Best
49	Malaysia	The Quadra Aqua/Quadra Aqua
50	Malaysia	The Shab
51	Malaysia	The Unbroken Bond
52	Malaysia	Theloner
53	Malaysia	Tulasythas Champion
54	Malaysia	Unicorn Power
55	Malaysia	Vict' Buddies
56	Malaysia	Vortexing
57	Malaysia	Vshwin/AFC2020nfun
58	Malaysia	Youngtists
59	Malaysia	Youth Sciencetists
60	Singapore	ALPHA/SST1
61	Singapore	Beta 1/SST2A
62	Singapore	Gamma/SST3
63	Singapore	Beta 2/SST2B
64	Singapore	Beta 3/SST2C

### Category 3: Above 20

No	Country	School Name
1	India	Hack Smiths.
2	Malaysia	Alpha
3	Malaysia	Alstroemeria
4	Malaysia	Den Team
5	Malaysia	Double S
6	Malaysia	Driver Swing Technique In Golf
7	Malaysia	E&S/AFC2020_E&S
8	Malaysia	Ehp
9	Malaysia	Fire Team
10	Malaysia	Future Teacher/Stability On Stick
11	Malaysia	Golf Posture
12	Malaysia	Golf Putting Technique
13	Malaysia	Golf Strategy: Mini Golf Simulation Strategy
14	Malaysia	IPTEK/UNIXBCOL
15	Malaysia	Jebat/Meta-E
16	Malaysia	Kamil's Clan / Kamil Clan
17	Malaysia	Kembara/See
18	Malaysia	Kudai/Prelude
19	Malaysia	LDS Fun Learning Production
20	Malaysia	Let's Fill It
21	Malaysia	Makerbros
22	Malaysia	Olaf
23	Malaysia	Panasonic32/Sun 1
24	Malaysia	Panasonic32/Sun 2
25	Malaysia	RBT-Lustrasi
26	Malaysia	Rizonx
27	Malaysia	Science Always Fun
28	Malaysia	Simple Solution
29	Malaysia	SJKT Jalan Fletcher (Team A)
30	Malaysia	SLB
31	Malaysia	Starlight
32	Malaysia	Super Bond
33	Malaysia	Team Jogo
34	Malaysia	Tech Divas
35	Malaysia	The JJ Family/JJ brothers
36	Malaysia	The_Tans
37	Malaysia	TP-Ruler
38	Malaysia	Trio Mysterio/Mystrio
39	Malaysia	World of Mathematics

# 4 Judging Process and Procedures

## Judges Selection

An invitation was sent to past Young Inventors Challenge (YIC) and Science Fair for Young Children (SFYC) judges by e-mail. More than 100 judges from different backgrounds agreed to volunteer and contribute as judge for ASTI Feynman Challenge (AFC) 2020. The AFC judging team was coordinated by a committee called the 'Judging Panel'. The task of the judging panel was to develop policy and oversee the judging process. The AFC 2020 judging team and judging panel was led by a Judging Advisor and worked independently from the organizing committee. A WhatsApp group was created for the judging panel to facilitate communications and to have discussions. Mr. Mohamed Faizal Bin Noor Batcha was appointed as an advisor to the judging panel and oversee the judging process.

## Judging Process and Procedures

AFC Judging Procedure was developed as guidance for the judges in the competition. The Judges Code of Conduct and Terms of Reference were also developed by ASTI for the judging team as a guideline and reference. Meanwhile AFC judging panel developed the rubric to be used by the judges for video marking purpose. This rubric was also used as the scoresheet by the judges.

Upon developing the rubric, a trial run was held on 2nd June 2020. A total of 10 judges were selected randomly for the trial run to test the developed rubric. As the rubric was an easy to understand document, there was no training held for the judges.

Since AFC is an online competition, the judging process for AFC was also held online. The videos for marking were sent to the judges on 12th June 2020. The deadline for the video marking was 25th June 2020. Videos were sent to the judges by e-mail along with the rubric and sample rubric for the understanding of the judges. A total of 318 videos submitted by the participants were marked by the judges. Each video was marked by 2 judges independently. The marks by the judges were compiled by the ASTI Secretariat. Upon compiling the marks, the top 5 videos for each category were selected by ASTI Secretariat. A total of 6 judges met at ASTI office on 18th July 2020 to verify the winners of AFC for each category and also to select the Inclusivity Award winners. Discussion between the judges was held to finalise the winners. The winners of the competition and the Inclusivity Award recipients were announced on 30th July 2020 at 5.30 p.m. via facebook live event.

All judges involved in the video marking were given an e-certificate for their contribution.

## Judging SWOT Analysis

A SWOT form was sent to all judges and volunteers to fill up. It was to further improve the implementation of the project in the future. The result of the feedback is given below:

<b>Strength</b> <ul style="list-style-type: none"><li>• The interest of science by each participant.</li><li>• Attract students to participate.</li><li>• Some students had made very professional looking videos.</li><li>• Online process that saved cost on venue and refreshments.</li><li>• Some submission by individual without teacher's involvement.</li><li>• Encourage youngsters to understand science better through videos, application and inventions.</li><li>• Promote creativity.</li><li>• Was able to conduct fully online.</li><li>• Detail elaboration of the judging rubric.</li><li>• Many volunteers judges from both academia and industry</li><li>• Overall was very good project.</li></ul>	<b>Weakness</b> <ul style="list-style-type: none"><li>• Lack of fix topic, each participant end up choosing too general presentation.</li><li>• Lack of understanding on innovation among the participants.</li><li>• Some students took it too lightly and produced very poor &amp; simplistic work.</li><li>• Rubric can be different according to category.</li><li>• Need to provide more and more training to Judges regularly to keep pace with latest development and changes. Recognition for Judges is always forgotten.</li><li>• Gadgets available for the students to make videos.</li><li>• Concern that standard of judging may be inconsistent.</li><li>• The video should be embedded in each form for each different participant, so that the judges do not have to go back and forth to the scoresheet and youtube.</li></ul>
<b>Opportunity</b> <ul style="list-style-type: none"><li>• Prepare students with exposure to innovation and product development.</li><li>• Great platform to encourage innovative explanation of scientific principles.</li><li>• Judges and participants outside Selangor can easily join.</li><li>• Vast possibilities on expanding this to other possible competition hold by our creativity.</li><li>• Get hidden talent from youngsters.</li><li>• Student could gain improvement in presentation skill.</li><li>• Appreciation of stakeholders</li></ul>	<b>Threats</b> <ul style="list-style-type: none"><li>• No threat was foreseen during ASTI competition.</li><li>• Ability to differentiate experiment from innovation.</li><li>• Overlapping / similar / predictable approaches and explanations for a concept.</li><li>• Misunderstanding on judging criteria as no possible discussion between judges due to fully online.</li><li>• There might be a mistake of key-in the participant code in the form</li></ul>



## Recommendations

- More coverage and Recognition in Media and Government needed.
- Collaboration with higher education institute for better presentation.
- Some interaction between judges should be held. Look into some online portals.
- Participants should be briefed about the Guidelines clearly. Some of the content creators may not know/understand the guidelines.
- In the future, ASTI can set a fix topic for presenter to explore and do a presentation instead of it being fully open.
- Embed each video in the scoresheet rather than needing to go to two separate url.
- Make the score table online too.

A survey was also held among the judges to have their feedback. Most judges understood the AFC Judging Procedure, AFC Terms of Reference and AFC Code of Conduct sent to them. The judges also seemed to understand the judging scoresheet developed for marking the videos. In the survey, some judges stated that they would prefer to have the judges training for ASTI Feynman Challenge. Most judges agreed that it was easy for them to submit their marks through google scoresheet. Judges were overall happy with the judging process and would like to participate as judge if ASTI Feynman Challenge is held again. Regarding the quality of the videos by participants, most of the judges said that the videos submitted were good even though there were a small number of judges who have found some of the videos to be average and below average.

# 5 Funding and Budget

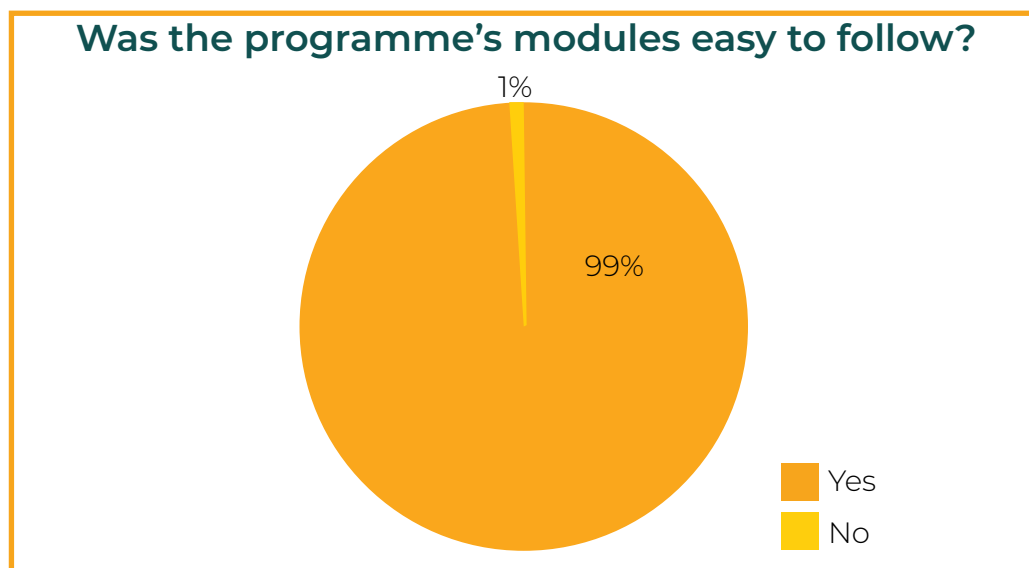
ASTI Feynman Challenge was funded by few individual sponsors. The income and expenses are as shown below:

Income	(RM)
Anonymous Donor	13,000.00
Dato' Tharuma Rajah	4,000.00
Mr.Hariharan Naidu	1,000.00
<b>Total Income</b>	<b>18,000.00</b>
Less: Expenditure	
Logo Designing	100.00
Poster Designing	150.00
Certificate Designing	500.00
Winning Prize for Category 1: Average Age of 6-13	1,800.00
Winning Prize for Category 2: Average Age of 14-19	1,800.00
Winning Prize for Category 3: Above 20	1,800.00
4 Special Inclusivity Award (RM 500 X 4)	2,000.00
Administration and Secretariat Expenses	9,000.00
Module Development	1,000.00
<b>Total Expenditure</b>	<b>18,150.00</b>
<b>Excess Of (Expenditure)/Income</b>	<b>(150.00)</b>

*\*The excess of expenditure was paid from the Association of Science, Technology and Innovation internal funds.*

# 6 Survey Analysis

At the end of the project, ASTI conducted a survey by sending out google form link to all the participants to get their feedback for future improvement about the project. A total of 200 respondents replied to the questionnaire. The participants were asked 10 questions and their responses have been presented in the graph and followed by explanation as below:



**Figure 1:** Training Modules

The analysis shows that most participants agreed that the modules were easy to follow as it was designed in a simple form.

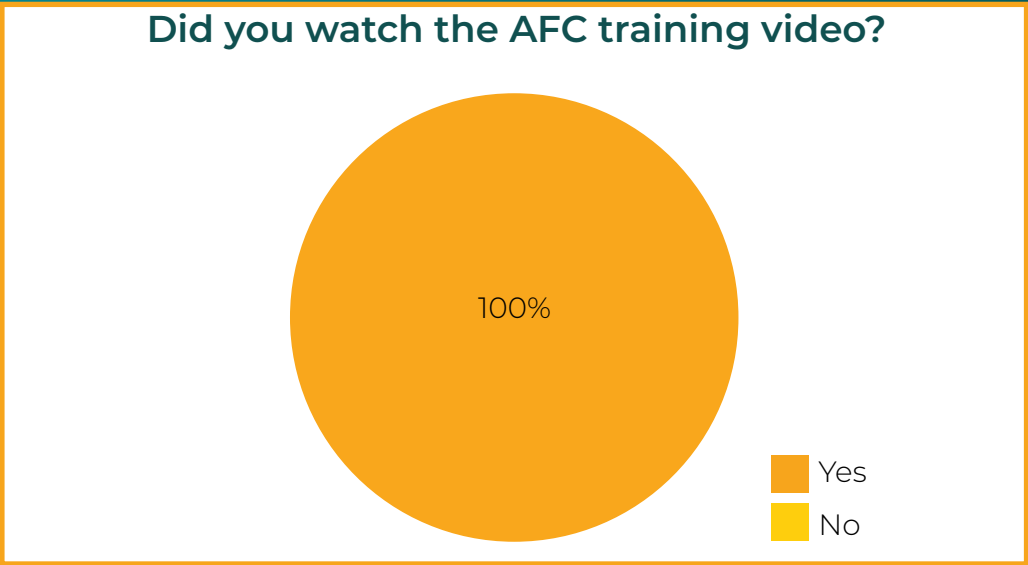
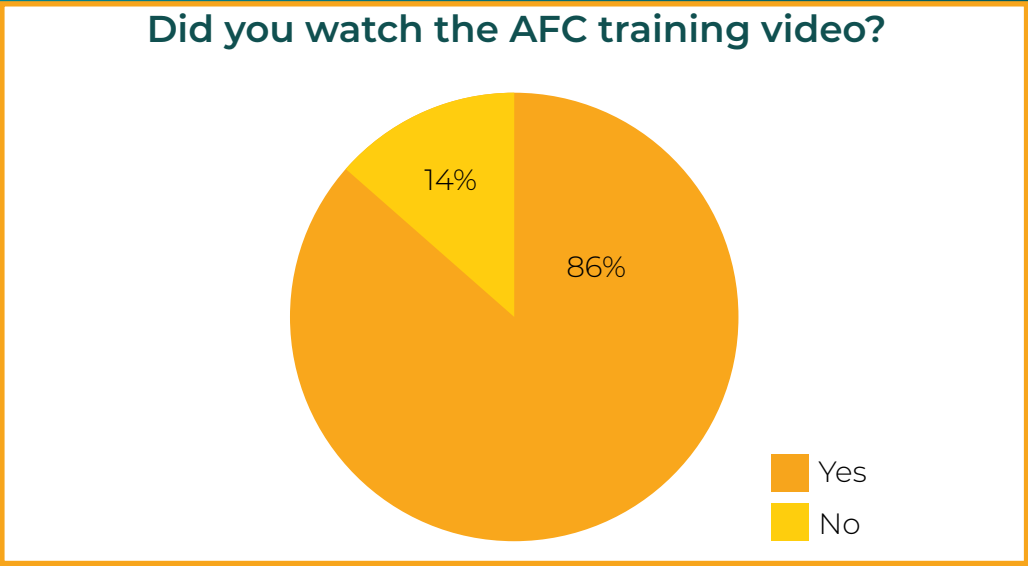
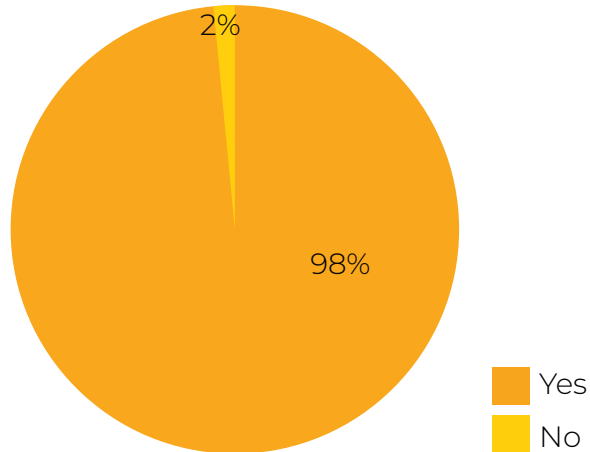


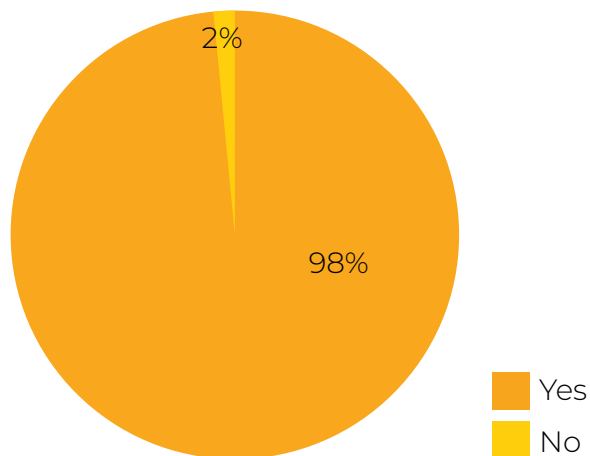
Figure 2: Training Videos

The result of the overview concluded that the presenters and moderators were able to direct the participants on the Feynman technique and guide them on the video submission steps.

### Were the organiser helpful and friendly?



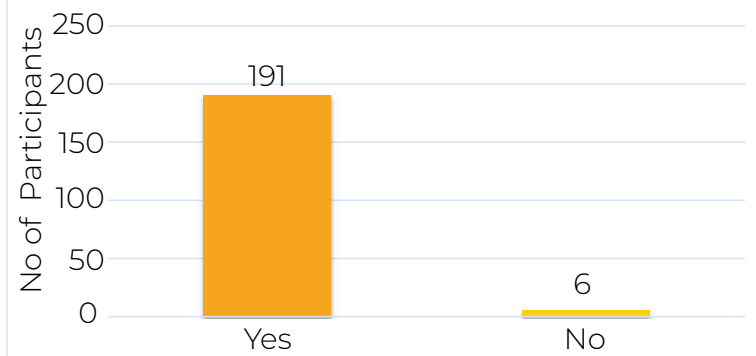
### Did the organiser answer your questions and clear your doubts?



**Figure 3:** Organiser's Assistance

As can be seen from Figure 3, most of the respondents rated the organisers as very helpful. It shows that the ASTI secretariat has helped the participants to understand the concept better and participate in AFC with more eagerness.

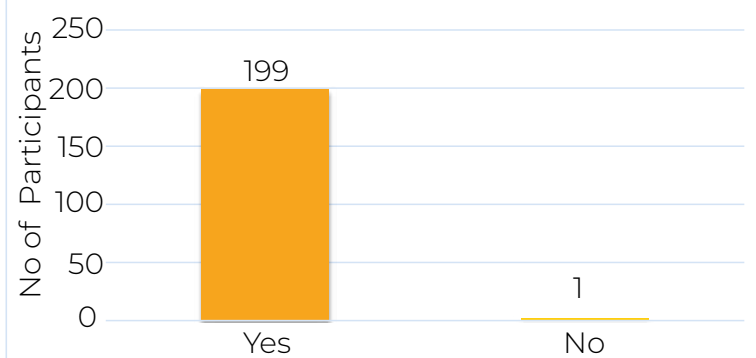
### Was there enough time to submit your video?



**Figure 4:** Time given to submit video

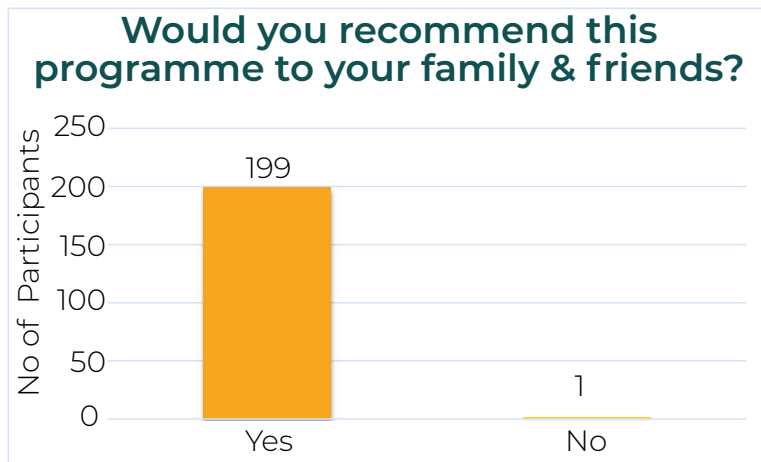
Most participants stated they had sufficient time to submit video. As it were, 6 respondents said no. This shows the duration of submission is sufficient.

### Did the programme encourage you to work as a team?



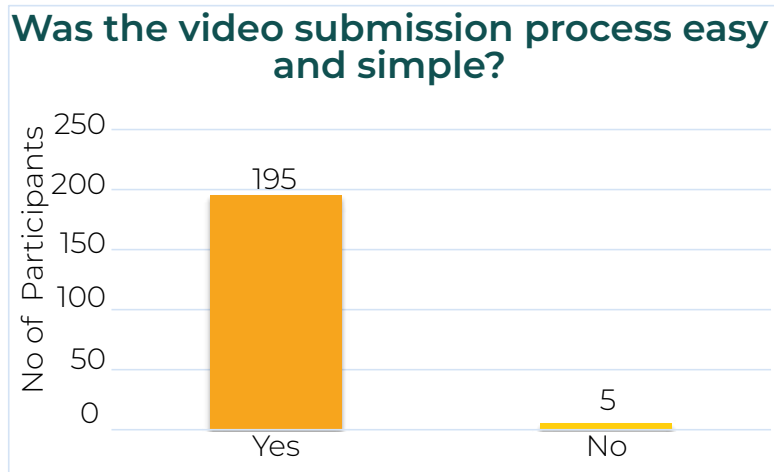
**Figure 5:** Encouragement to work as team

Most of the respondents strongly agreed that the methodology used in AFC promotes cooperation and interaction since the analysis shows that the competition has contributed to them to work in a team, more so during the lockdown period.



**Figure 6:** Recommendation of AFC Competition

Figure 6 shows that most respondents found that the competition encouraged their participation and improved teamwork and communication skills. They would recommend the programme to their families and friends. ASTI is keen to contribute in the near future to a wider range of participants.



**Figure 7:** Video Submission Process

As per Figure 7, majority of the participants found the video submission process to be easy.



Some recommendations based on the survey:

1. *There were positive feedback on the usage of videos for training. ASTI secretariat is encouraged to also look into video based training. Facebook live training should also be explored.*
2. *The methodology used for AFC has been effective. The secretariat is encouraged to document the SOPs for this programme for it to be followed in future similar programmes.*
3. *Since almost all of the respondents said they would participate again in future AFCs, ASTI is encouraged to run this programme on a yearly basis.*
4. *The positive feedback also shows that this programme is beneficial to students and parents alike. ASTI should explore running this programme at the school level for more students to participate.*



# 7 SWOT Analysis

This was the swot analysis done by and for the organising team (ASTI). Here is the result.

<p><b>Strength</b></p> <ul style="list-style-type: none"> <li>• Cost effective program</li> <li>• Able to reach out to more people in a short period of time</li> <li>• Able to reach out to more countries</li> <li>• Good support and publicity with the help of the Ministry of Education Malaysia</li> </ul>	<p><b>Weakness</b></p> <ul style="list-style-type: none"> <li>• Participants face difficulties in understanding the concept of the competition since it is a pilot project</li> <li>• Some participants did not use the Feynman technique in their videos</li> <li>• The participants faced difficulties during video submission as they were new to the process of posting videos on Social Media (YouTube)</li> </ul>
<p><b>Threats</b></p> <ul style="list-style-type: none"> <li>• Challenges faced by the participants to understand the ASTI Feynman Challenge as it is very new concept</li> <li>• Continuous funding to run the programme on a yearly basis.</li> </ul>	<p><b>Opportunity</b></p> <ul style="list-style-type: none"> <li>• The participants learned about the Feynman Technique</li> <li>• The participants learned that an invention can be simple and doable at home with little resources and cost</li> <li>• The participants learned about various video making tools and techniques</li> <li>• The participants learned about uploading video in YouTube and submitting the link</li> <li>• The organizer learned about new method of conducting programmes during the crisis period of Covid-19 lockdown</li> </ul>
<p><b>Recommendation</b></p> <ul style="list-style-type: none"> <li>• Organize more competition such as this for our students to improve their scientific understanding of concepts.</li> <li>• Open topic is great to open up creativity. However, look into specific/focussed topic e.g. robotics, agriculture, computers, technology, automotive etc.</li> <li>• Give additional information especially for the special awards presentation, the criteria and the deadlines to be specified earlier</li> <li>• Feynman technique is really good to explore and understand scientific concepts. In future may be can do similar program with other techniques.</li> <li>• To have a theme at next round.</li> </ul>	

## School Level ASTI Feynman Challenge (SL\_AFC)

After the overwhelming response for the AFC, we decided to ask a few schools if they were interested to run the AFC at the school level. SMK Merbau from Miri, Sarawak had shown interest in organising ASTI Feynman Challenge at their school as a school event. ASTI organised a training session for the teacher from SMK Merbau via Zoom on 2nd July 2020 to explain the Feynman technique and the method to conduct School Level ASTI Feynman Challenge (SL\_AFC). ASTI Feynman Challenge modules were sent to the school prior to the training. Once the training was held, the school was required to submit a proposal to conduct SL\_AFC. Upon obtaining approval from ASTI, the school started to organise the programme in their school. SMK Merbau conducted SL\_AFC from 6th July 2020 till 10th July 2020 and submitted a report after completing the programme in their school. Both the SL\_AFC proposal and report template were sent to the school. A total of 50 students participated in the SL\_AFC organised in SMK Merbau. Students were required to submit their videos online. E-certificate was given for the participants and Certificate of Recognition and Competence was also given to the school for completing the SL\_AFC. This was an amazing learning curve for us and it has motivated us to start work on conducting AFC at the school level.

# 8 Conclusion

The ASTI Feynman Challenge (AFC) is a great success as the concept was designed in less than a week and launched during the Covid-19 lockdown period. The response was overwhelming as the promotion of the project reached out to more than 5 countries in the very first pilot. AFC had broken a record as ASTI's project with highest participation confirmation. It goes to show that even in times of hardship, there are still opportunities for learning.

We believe that the time of Covid-19 lockdown has provided families an opportunity to work in a team to produce a meaningful product. We hope not only parents learned about their children's learning capacity – but also to work as a team to build a better family cohesion post Covid-19.

We would like to thank all our funders, judges, and volunteers who continuously support us in making AFC 2020 a great success. A special thank you to LeHigh University in the USA and the Institut Pendidikan Guru Malaysia (Malaysian Teachers Training College) for their support and encouragement.

# APPENDIX

## Category 1

### Champion

Team Name : Creative Team/Creative  
 Scientific Concept : Air Pressure  
 Link : <https://youtu.be/FHGs2nojusQ>

### 1st Runner Up

Team Name : Magnetic Trio 1  
 Scientific Concept : Sound & Vibration  
 Link : [https://www.youtube.com/watch?v=xMQ7MM\\_9Lc8](https://www.youtube.com/watch?v=xMQ7MM_9Lc8)

### 2nd Runner Up

Team Name : JJSRI  
 Scientific Concept : Earthquake  
 Link : <https://youtu.be/av1zn44wj14>

## Category 2

### Champion

Team Name : Chillax  
 Scientific Concept : Sound Waves  
 Link : <https://www.youtube.com/watch?v=KgQeT1dnC2g>

### 1st Runner Up

Team Name : Nature and Science  
 Scientific Concept : Cohesive & Adhesive Force  
 Link : <https://youtu.be/Bv0NTdrMQNw>

### 2nd Runner Up

Team Name : AJ Smart Science  
 Scientific Concept : Newton's Third Law  
 Link : <https://youtu.be/BU6L3OHRblc>

## Category 3

### Champion

Team Name : The\_TANs  
 Scientific Concept : Archimedes Principle  
 Link : [https://youtu.be/\\_NHyeoRqlf4](https://youtu.be/_NHyeoRqlf4)

### 1st Runner Up

Team Name : LDS Fun Learning Production  
 Scientific Concept : Water Cycle  
 Link : <https://youtu.be/RJxoLrfsSFO>

### 2nd Runner Up

Team Name : ALPHA  
 Scientific Concept : Pain Reflex  
 Link : <https://youtu.be/4BG0GGx2r20>

## Special Award

### Script & Storyline

Team Name : IPTEK/UniXBCol  
 Scientific Concept : Units Conversion  
 Link : [https://www.youtube.com/watch?v=WXP4\\_VUJWdM&feature=youtu.be](https://www.youtube.com/watch?v=WXP4_VUJWdM&feature=youtu.be)

### Advanced Knowledge

Team Name : Gamma/SST3  
 Scientific Concept : The Intermediate Axis Theorem  
 Link : [https://youtu.be/\\_BOWYtkLPRU](https://youtu.be/_BOWYtkLPRU)

### Video & Explanation

Team Name : eaTary  
 Scientific Concept : Food Pyramid  
 Link : [https://youtu.be/x\\_IJydEcGPs](https://youtu.be/x_IJydEcGPs)

### Video With Most Facebook Likes

Team Name : Nicola/JANAKI AMMAL TEAM  
 Scientific Concept : Shadow  
 Link : [https://youtu.be/W\\_Tod2yHWJY](https://youtu.be/W_Tod2yHWJY)



## CONTRIBUTION FORM

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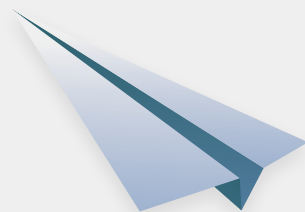
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