



# REPORT 2022





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## **ASTI Feynman Challenge (AFC) 2022 Report**

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# **OUR HEARTFELT THANKS!**

**Ministry of Education (MOE)**

**Ministry of Science, Technology, and Innovation (MOSTI)**

**Malaysian Incentive Community Empowerment (MyICE) Grant**

**Department of Registration of Societies Malaysia (JPPM)**

**Headmasters/Headmistress**

**Teachers**

**Parents**

**Students**

**And**

**To all the Judges**

# **ASTI Feynman Challenge (AFC) 2022 Working Group Committee**

Project Advisor:  
**Dr. Mohamed Yunus Bin Mohamed Yasin**

Project Director:  
**Ts. Dr.Umaiya Munusamy**

ASTI Secretariat Representative:  
**Ms. Yugeswari Krishnan**  
**Ms. Vanitha Vasu**

Chief Judge:  
**Gan Quan Fu**

Assistant Chief Judge:  
**Mr. Devanthiran Letchumanan**



# EXECUTIVE SUMMARY

Association of Science, Technology, and Innovation (ASTI) was one of the the first non-governmental organization (NGO) that designed an online homebased learning platform called theASTI Feynman Challenge (AFC) competition during the COVID-19 lockdown in 2020. This competition is a team based on-line contest which was opened to all communities and could be completed entirely from home using the Feynman Technique for learning. With a minimum of 2 persons per team, the AFC requires the participants to explain a scientific principle of their choice using a simple teaching tool or method which was invented by the participants themselves. The teaching tool can be invented by utilizing simple day-to-day objects which can be found at home. The scientific principle must then be explained and recorded in a 5 minute length video. This recorded video is uploaded on YouTube for assessment.

The challenge was divided into 3 categories, based on the age level which are Category 1 from age 10-12, Category 2 from age 13-17 and Category 3 above 18. The first, second, third, fourth and fifth place winner for each category are given cash prizes. There are also 3 special inclusivity awards for teams which have shown special capabilities or managed to overcome many hurdles in completing their work.

For this year, once the funding was secured,the poster was developed in both English and Bahasa Malaysia. ASTI Feynman Challenge 2022 was funded by Ministry of Science, Technology, and Innovation (MOSTI) and Malaysian Incentive Community Empowerment (MyICE) grant under the Ministry of Home Affairs.

ASTI established the terms and conditions and developed 7 modules as a guidelines for the participants. The module consists of the competition's rules and regulations, an introduction to the Feynman Technique, steps to upload video and many more.



ASTI created a web page containing all the information regarding AFC competition (<https://www.asti.org.my/afc2022/>). The poster was promoted and published on ASTI's webpage and all social media from 13th April 2022 onwards. Upon receiving overwhelming responses from participants, ASTI extended the registration and video submission deadline. A total of 497 teams were successfully registered.

The deadline for video submissions were set on 8th July 2022. A total of 313 videos featuring various scientific principles and concepts were received. A panel of 114 judges evaluated and reviewed the videos to determine the winners.

For video marking, the judges followed the rubric developed by the AFC judging panel. The judging panel consists of seven experienced judges. Each judge were given approximately two weeks to complete the videos assessment. The AFC winners for each category and the Inclusivity Award winners were discussed and finalized through Google Meet among the AFC judging panel. On 7th September 2022, the winners were announced.

ASTI performed a survey to all participants using a google form link to collect their opinions to improve the project in the future. There were thirteen questions, and the responses were illustrated with graphs.

The responses were very positive as the project has been successfully promoted in five countries. AFC has shown that there are significant benefits, for families to work together to create a meaningful learning experience for both child and parents.





# 1.0 INTRODUCTION

The objective of ASTI as a not-for-profit, non-governmental organization (NGO) is to empower 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. Also, teacher training programmes such as, On the Wings of Fire Series, helps in building the skills and knowledge among the teaching community through new teaching methodologies that is much-needed in today's fast-changing world. ASTI also conducts various outreach programmes throughout the year to augment the science-related educational goals of our participant.

ASTI Feynman Challenge is a project that was designed during the COVID-19 lockdown in 2020. ASTI conducted this online competition for all communities which includes families, refugees, orphanages etc. ASTI believe that the learning process should never stop no matter what the circumstances are. In the words of Eric Hoffer "In a time of drastic change it is the learners who inherit the future. The learned 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 with a minimum of 2 person per team. The teams can consist of parents and children, brothers and sisters, friends and study buddies. The team members do not need to be living under one roof as they may communicate via online platforms such as zoom etc. This is to allow the completion of the project that was carried out entirely from the safety of the home.

The teams were requested to invent something (tool/ method) to explain a scientific principle that they have learnt (or going to learn) in the school. The invention can be a simple tool using day-to-day objects that can be found from home. For example, they can design a catapult with clips and rubber bands to explain the third law of Newton. The team must then video recorded their explanation of the scientific concept using the invented props.

In summary, the invention (device/ method) is basically a teaching tool. Each video that was uploaded into the YouTube channel should not be more than 5 minutes. The video can be recorded using a mobile phone. ASTI is not very concerned with the recording quality of the videos as long as the voices are clear, and the qualities of the images are discernible. We focus on the content and delivery of the message.

The learning principle or pedagogy is based on the Feynman Technique which can be summarised in 4 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, there is an added step between steps 1 and 2 which is step 1.5 that involve with Invention of 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. The explanation must be as simple as possible that any layman or young person can understand the scientific concept being explained.

## 2.0 METHODOLOGY AND TIMELINE

ASTI organized this program for the first time during the COVID-19 lockdown period and was successfully replicated in 2022. It is an adapted model of some of the programmes that were organised by ASTI. The programme was developed and designed by taking into consideration the challenges faced by the students during the pandemic lockdown.

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

- Category 1** : Age of 10-12
- Category 2** : Age of 13-17
- Category 3** : Above 18

The prizes for each of the categories above are as follows:

- First prize** : RM 700
- Second Prize** : RM 500
- Third Prize** : RM300
- Fourth Prize** : RM 200
- Fifth Prize** : RM 100

ASTI has also announced 3 Special Inclusivity Award for teams who showed some special talent and/or that they have managed to do their video against overwhelming odds. The Special Inclusivity awardee received RM500 each.

ASTI developed the Implementation Process as below:

- 1) Project Development and Financing
- 2) Poster, Module and Webpage Development
- 3) Promotion via Poster and Video
- 4) Participants Registration
- 5) Judges Briefing and Refinement of the Judging method
- 6) Video Preparation by participants
- 7) Video Submission by participants
- 8) Video marking and finalising the winners
- 9) Winners' announcement
- 10) Distribution of Certificates and Prizes

Date	Activity
February 2022	Proposal and Funding
March 2022	Poster Design and Modules Developments
13th April 2022	Webpage Creation and Publish the Poster and Modules Promotion via YouTube Video
3rd June 2022	Registration Submission Deadline
19th May 2022	Online Training
8th July 2022	Video Submission Deadline
18th July – 21st August 2022	Video Marking by Judges
22nd - 24th August 2022	Finalize Winning Teams for all 3 categories and Special Inclusivity Award
7th September 2022	Announcement of The Winners
Mid - September 2022	Distribution of Winning Prizes and E Certificates

## 3.0 SUMMARY OF IMPLEMENTATION

### Project Development and Financing

ASTI' successfully developed the project proposal to be distributed to the potential funders by the secretariat to seek sponsorship.

### Publicity Poster Development

Once the funding was approved, the Publicity Poster was developed. The content for the publicity poster was written, proofread, and finally sent to the designer for a layout design. The poster is as shown in the image below:



The poster for the ASTI Feynman Challenge features a man in a suit on the left. The title 'ASTI Feynman Challenge' is prominently displayed. A list of prizes is shown in a stylized, colorful banner: 1st prize: RM 700, 2nd prize: RM 500, 3rd prize: RM 300, 4th prize: RM 200, and 5th prize: RM 100. Below this, it states 'Participation is FREE'. The text describes the challenge as an online project first developed during the MCO period in 2020, with over 600 registrations and 318 videos received. It explains that participants must create a simple invention to teach a scientific principle. A QR code is provided for more details. The poster also lists three categories: Primary (10-12 years old), Secondary (13-17 years old), and Above 18 years old. It mentions special inclusivity awards and digital certificates for participants. Registration details and contact information are at the bottom.

**STAND A CHANCE TO WIN**

1st prize : RM 700  
2nd prize : RM 500  
3rd prize : RM 300  
4th prize : RM 200  
5th prize : RM 100

**Participation is FREE**

Association of Science, Technology and Innovation (ASTI) is a not-for-profit organisation with the main objective to empower young people to think independently through various science-based and, skills-development projects.

The **ASTI Feynman Challenge (AFC)** is an online project first developed and implemented during the MCO period in 2020. AFC received a tremendous response with over **600 registrations** from **7 countries** and **318 videos** received.

AFC requires a team of two people or more where you can work on the challenge from anywhere even from your home! In AFC, you have to create something simple invention (invent a product/new method/new experiment) that you use to teach a scientific principle you have learnt at school. For example, your invention can be created with any object that you find at home; e.g. you can design and build a catapult made of clips and rubber bands to teach the 3rd Law of Newton. Just send us a video with your explanation.

**We use the FEYNMAN TECHNIQUE in this project comprising of 4 simple steps:**

1. CHOOSE A CONCEPT YOU WANT TO LEARN/TEACH
2. INVENT YOUR TEACHING TOOL AND TEACH IN A SIMPLE WAY
3. IDENTIFY GAPS IN YOUR EXPLANATION AND IMPROVE
4. REVIEW AND SIMPLIFY

**3 CATEGORIES**

CATEGORY 1: **Primary** (10-12 years old)  
CATEGORY 2: **Secondary** (13-17 years old)  
CATEGORY 3: **Above** 18 years old

We also have up to 3 special inclusivity Awards to give to teams who have gone above and beyond great odds to produce fantastic videos - each at RM500.

All qualified participants will receive digital certificates.

Visit [www.asti.org.my/afc2022/](http://www.asti.org.my/afc2022/) to Register your team details and Download Terms & Conditions and modules.

For further details kindly email us at [astifeynman2020@gmail.com](mailto:astifeynman2020@gmail.com) or WhatsApp us to 014 712 4217

**SCAN THE QR CODE**

FOR MORE DETAILS AND LATEST DEADLINES



## Module Development

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

### • Terms and Conditions

The objective of the terms and conditions were

- To outlines 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 The objectives of this module were

- To give the participant an idea on how to produce their video.
- To be a catalyst for the participants to explore the internet for collection of ideas for their project.
- To show how parents can work and learn together with their children in a meaningful way.

### • Module 2\_ What is the Feynman Technique

The objective of this module was

- To introduce the Feynman Technique for learning.

### • Module 3\_Teaching Method and Developing a Lesson

The objectives of this module were

- To ensure the process of teaching or facilitating in a more effective way for the non-teacher facilitator (like the parent, elder brother, guardian etc).
- To develop their teaching plan during video presentation.

Teaching method and developing a lesson module aims to:

1. Identify characteristics of the learners
2. Accommodate various learning styles
3. Conduct the demonstration and explanation using appropriate skills and tools or method that they have invented
4. Identify and apply effective teaching strategies

With the information from this module, the students were able to integrate a student-centered classroom (or “virtual classroom”). The module was designed with broader objectives to ensure the participants learning experience are more meaningful. The module was also useful for the non-teacher facilitators (like parents, older siblings etc.)who can be involved in their kids/ teams life long education process.

## • **Module 4\_Project Management and Planning**

The objectives of this module were:

- To understand what is a project
- To understand project based learning as a method to learn stuff
- To understand the different phases and some of the processes involved in a project
- To develop and implement a project

## • **Module 5\_ How to upload video in YouTube and Video Submission Guideline**

The objectives of this module were:

- 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 on the Video Submission procedures

This module will also assist the participants to be a future “Youtuber”.

## • **Module 6\_ What is Invention?**

The objectives of this module were:

- To introduce the concept of invention or innovation
- To highlight the fact that an invention or innovation does not need to be very complex and difficult

## • **Module 7\_ Judging Criteria**

The objective of this module was:

- 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 and details of participation was created at ASTI's website. The webpage was available at the link <https://www.asti.org.my/afc2022/>.

The webpage had the following items:

- 1) Introduction to ASTI Feynman Challenge
- 2) Registration for ASTI Feynman Challenge
- 3) ASTI Feynman Challenge Launch (see also Appendix)
- 4) ASTI Feynman Challenge Briefing (video)
- 5) ASTI Feynman Challenge Online Training
- 6) Timeline of ASTI Feynman Challenge
- 7) ASTI Feynman Challenge Poster
- 8) Terms and Condition of ASTI Feynman Challenge
- 9) Frequently Asked Questions
- 10) KPM Approval
- 11) Modules of ASTI Feynman Challenge
- 12) Video Submission of ASTI Feynman Challenge
- 13) Summary of ASTI Feynman Challenge
- 14) Press Note of ASTI Feynman Challenge

## Promotion via Poster and Video

The advertisement via poster was initiated on 13th April 2022. The poster was made available on ASTI's website, Facebook page, and Instagram account. The poster was also sent out via WhatsApp blast to all the teachers and other relevant contacts. ASTI also sent an email to all the schools and teachers who took part in previous ASTI's projects such as the Science Fair for Young Children, Young Inventors Challenge, Creative and Critical Thinking Camp/Workshop, ASTI Leap Challenge, and others.

## Participants Registration

At the initial stage, the participants' registration deadline was set at 11th May 2022. Due to overwhelming responses and request for extension of registration date, the registration deadline was extended to 3rd June 2022. As of 3rd June 2022, we had 497 teams that were successfully registered to take part in the competition. The participants' registration breakdown according to category is shown in the table below:

No	Category	No. of Teams
1.	Category 1 : Average Age of 10-12	150
2.	Category 2 : Average Age of 13-17	249
3.	Category 3 : Above 18	98
TOTAL		497

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

No	Country	No. of Teams
1.	Malaysia	469
2.	Philippines	5
3.	India	1
4.	Thailand	18
5.	Singapore	3
6.	Myanmar	1
TOTAL		497

## Video Preparation by Participants

The participants were given time from 13th April 2022 to 11th June 2022 to develop their video to explain a scientific principle. Again, due to many request from the participants, the deadline for video submission was extended to 8th July 2022.

## Video Submission by Participants

As of 8th July 2022, we had received a total of 313 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 shown in the table below:

No	Category	No. of Teams
1.	Category 1 : Average Age of 10-12	96
2.	Category 2 : Average Age of 13-17	170
3.	Category 3 : Above 18	47
TOTAL		313

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

No	Country	No. of Teams
1.	Malaysia	302
2.	Philippines	2
3.	Thailand	6
4.	Singapore	3
TOTAL		313

## Videos Marking and Finalising the Winners

The compiled videos were sent to the judges for marking from 18th July 2022 to 24th August 2022. The marking criteria was rigorous. Each video was marked by three different judges and the average marks were calculated. If the highest marks variation between two judges were more than 15 marks, the 3rd judge's marks will be counted to reduce the variance. All the marks were compiled and analysed to determine the winners.



## Winners Announcement

On 7th September 2022, the Association of Science, Technology, and Innovation held a Virtual Winners Announcement through YouTube live. The following is the poster that was designed for the Virtual Winners Announcement Ceremony:

**ASTI Feynman Challenge**

**Join us live**

**AFC WINNERS  
ANNOUNCEMENT  
2022**

7th September 2022, Wednesday  
05.00 PM (MYT)

**LIVE STREAM**  [shorturl.at/aBTZ5](https://shorturl.at/aBTZ5)

Organiser: **ASTI**

Funding Partners: **MyICE**

  
KEMENTERIAN SAINS,  
TEKNOLOGI DAN INOVASI

## • Category 1 : Average Age 10-12

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

Placing	Team Name	Participant Name
Champion	The Little Scientists (Malaysia)	Tan Ching Thong
		Alice Ting Zhen Xing
		Ryan Seah Toh Hao
		Loh How Heng
		Dylan Lim Han Pin
1st Runner Up	Team Conqueror (Malaysia)	Ooi Yu Cheng
		Daphne Tan Sze Yue
		Giovanna Tan Sze Rou
2nd Runner Up	Sjktmmn Stars (Malaysia)	Deevasheni A/P Sivakumar
		Vaithieshwariee A/P Muniandy
		Venten A/I Saravanan
		Jaya Prataban A/L Thanapalan
		Lavaneshwarran A/L Sivam
Fourth Place	Passionate Performers (Malaysia)	Santhosh Vijayan
		Lydia Thomas
Fifth Place	Junior Einsteins (Malaysia)	Kabinaash Muthurajah
		Loka Sivan Thana Selvan
		Deepashini Balamurugan

## • Category 2 : Average age 13-17

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

Placing	Team Name	Participant Name
Champion	The Atoms (Malaysia)	Adam Harris Bin Kushsairy
		Muhammad Adam Bin Mohd Faizal
		Danish Izuddin Bin Abd Faisal
		Emil Abdullah Bin Mohd. Pauzi
		Muhammad Hidayat Bin Razak
1st Runner Up	SEG HWA Team 1 (Malaysia)	Tan Kian Yu
		Lee Jia Quan
2nd Runner Up	B The Force (Malaysia)	Alexander Michael Baugh
		Robert Leonadas Baugh Jr.
Fourth Place	PSHS-SRC (Philippines)	Kiara B. Polvorosa
		Azman M. Usop
Fifth Place	Truesci (Thailand)	Munchuwee Sakchanalaya
		Patteera Sakchanalaya

### • Category 3 : Above 18

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

Placing	Team Name	Participant Name
Champion	Easykit Science (Malaysia)	Nur 'Amirah Damia Binti Mohd Rozis
		Najiha Binti Mohd Zulkhairi
		Nur Alia Arisya Binti Mohamad Jamil
		Fatin Nurain Syamimi Binti Abd Manaf
		Dr. Hjh. Fazliza Binti Che Amat
1st Runner Up	Bernoul Learning (Malaysia)	Siti Rogayah Bt Abdullah
		Siti Aida Binti Shari
		Nurul Hanis Binti Ahmad Mazuki
		Nurul Aufa Binti Anuar
2nd Runner Up	Food Slide (Malaysia)	Ainul Najihah Binti Hassan @ Zakaria
		Hajar Aisyah Binti Mohd Fazli
		Nur Aina Irdina Binti Samsudin
		Nur Aishatul Ibtisam Binti Abdul Latif
Fourth Place	Edumachine (Malaysia)	Ainul Najihah Binti Hassan @ Zakaria
		Che Nurul Nur Himadatul Najwa Binti Mohd Nor
		Najiha Binti Mohd Zulkhairi
		Fazliza Binti Che Amat
Fifth Place	Bloodpoly (Malaysia)	Nur Sabirah Husna Binti Su
		Akrimi Maswa Binti Muhamad Rashidi
		Che Nurul Nur Himadatul Najwa Binti Mohd Nor
		Irna Binti Zainuddin
		Thangeswary Annamallai

## • Special Inclusivity Awards:

Special Inclusivity Award were given for three teams with extraordinary video and the selection was done by the Judging Panel. These prizes were awarded by taking into consideration the amazing scores the team obtain in a particular aspect of the judging criteria or the team was able to overcome challenging obstacles during the video production and submission which may include under-resourced communities. The list of winners were shown in the table below:

Award	Team Name	Participant Name
Best Team Work and Efforts	Str Junior Scientists (Malaysia)	Lhishaanthini A/p Rubiindran
		Riayasshini A/p Murugan
		Liniesh Theivendra
		Dhaniyaaselvi A/p Prem Kumar
		Kathir Venthan A/I Sivasangker
Best Idea and Creativity	ET-Box (Malaysia)	Shazrina Mazny Binti Mazlan
		Muhammad Mikhail Muqri Bin Mohamad Firdzaus Syah
		Ahmad Affanzain Bin Ahmad Amir
		Mishael Medina Binti Mohamad Firdzaus Syah
Best Script and Story Line	Team Balzers (Singapore)	Lovette Tew Yu Xin
		Sreya Balasubramanian
		Lee Zhi Xuan Avilyn Joy



## 4.0 LIST OF PARTICIPANTS

The list below shows the details of 313 teams who have successfully submitted their video and completed the journey of ASTI Feynman Challenge 2022.

### Category 1 : Average Age 10-12

No	Country	Team Name
1.	Malaysia	Magma
2.	Malaysia	Junior Einsteins
3.	Malaysia	CIJ2 Sci-Squad
4.	Malaysia	Science Hunters
5.	Malaysia	Technogilrs
6.	Malaysia	Passionate Performers
7.	Malaysia	ET-Box
8.	Malaysia	The Little Scientists
9.	Malaysia	The Tiger Cousins
10.	Malaysia	"I Love Science"
11.	Malaysia	Crazy Fun
12.	Malaysia	Rocketiers Team
13.	Malaysia	Newton's Nerds
14.	Malaysia	Kumpulan Melati
15.	Malaysia	Young Scientists
16.	Malaysia	Sapphire Team
17.	Malaysia	Smart Students
18.	Malaysia	The Water Dragons Team
19.	Malaysia	Senior Feynman
20.	Malaysia	Kumpulan Bestari
21.	Malaysia	Virus Team
22.	Malaysia	TRIO
23.	Malaysia	Science kit
24.	Malaysia	UNIX
25.	Malaysia	O-Three
26.	Malaysia	STR Black shadow pro kids
27.	Malaysia	STR Intelligent minds
28.	Malaysia	STR Adventurous Astronauts

No	Country	Team Name
29.	Malaysia	STR Junior Scientists
30.	Malaysia	STR Fantastic Five
31.	Malaysia	STR science inventors
32.	Malaysia	STR Strike Science
33.	Malaysia	STR Albert Einstein
34.	Malaysia	Team Sai Vivekam
35.	Malaysia	SJKTS Angry Birds
36.	Malaysia	SJKTS Science Cops
37.	Malaysia	Composting Avengers
38.	Malaysia	Sjkts Dharmesh (Power Moves)
39.	Malaysia	Sjkt Rawang Creation Team
40.	Malaysia	Abdul Khalam Group
41.	Malaysia	Sjkts Digging Science
42.	Malaysia	Powerfull Team 1
43.	Malaysia	Powerfull Team 2
44.	Malaysia	SJKTS FANTASTIC FIVE
45.	Malaysia	intelligent minds
46.	Malaysia	SJKTS Mosquito Spray
47.	Malaysia	STR Genius Minds
48.	Malaysia	SJKTS SCIENCE KIT
49.	Malaysia	STR Intelligent Minds
50.	Malaysia	SJKTS Sun Shine The King
51.	Malaysia	Super Scientist
52.	Malaysia	Shining Scientists
53.	Malaysia	Young Scientists
54.	Malaysia	SIRIUS
55.	Malaysia	SJKTS Wild Investigators
56.	Malaysia	Worlf of Science
57.	Malaysia	Kayvan Team
58.	Malaysia	Indian Scientist
59.	Malaysia	Team Conqueror
60.	Malaysia	STR Junior Feynman
61.	Malaysia	Lab Rats
62.	Malaysia	Thomas Alwa Edison
63.	Malaysia	Genius
64.	Malaysia	Bit Science
65.	Malaysia	Future Scientist
66.	Malaysia	Little Scientis

No	Country	Team Name
67.	Malaysia	Lab Rats 2
68.	Malaysia	The Galaxy
69.	Malaysia	Arumugam A/L Govindasamy
70.	Malaysia	STR Experimenters
71.	Malaysia	Wonders of science
72.	Malaysia	STR Star
73.	Malaysia	STR Rocky
74.	Malaysia	STR Fantastic
75.	Malaysia	STRMNS
76.	Malaysia	STBS Explorers
77.	Malaysia	STR Rwg
78.	Malaysia	STR Science Girls
79.	Malaysia	LITTLE Explorers
80.	Malaysia	STR Black Pink
81.	Malaysia	Einstein Girls
82.	Malaysia	STR Science Panthers
83.	Malaysia	STR Pluto
84.	Malaysia	STR The Leaders
85.	Malaysia	STR Mars
86.	Malaysia	STR Drakula
87.	Malaysia	Young Scientist
88.	Malaysia	Veera
89.	Malaysia	SJKTMMN Stars
90.	Malaysia	Green Eco Villa
91.	Malaysia	AFC 2022 Creative Guys
92.	Malaysia	SarvenaSre
93.	Malaysia	STR Young Brains
94.	Malaysia	Digital Scientist
95.	Malaysia	Young brains
96.	Malaysia	Arumugam A/L Govindasamy

## Category 2 : Average age 13-17

No	Country	Team Name
97.	Malaysia	B The Force
98.	Malaysia	The Revolutionaries
99.	Malaysia	Prince Princesses
100.	Malaysia	Sprightly Team
101.	Malaysia	Team Alpha Nucleotides
102.	Malaysia	Ambatuween
103.	Malaysia	Digging Science
104.	Malaysia	Team Sg Besi
105.	Malaysia	STJ 2
106.	Malaysia	Material Gurls
107.	Malaysia	Quarter of Silent
108.	Malaysia	The Eunoias
109.	Malaysia	ID
110.	Malaysia	The Gadis
111.	Malaysia	Galaxy Blasters
112.	Malaysia	SMKCBW 1
113.	Malaysia	BingQiLing
114.	Malaysia	Insoft I
115.	Malaysia	MWT squad
116.	Malaysia	Physic Babes
117.	Malaysia	Wirawati
118.	Malaysia	Dodol Pandan
119.	Malaysia	Spiderman
120.	Malaysia	Potato
121.	Malaysia	Rezeki
122.	Malaysia	Imagination
123.	Malaysia	Innovation Team
124.	Malaysia	INSOFT III
125.	Malaysia	Fatui Harbingers
126.	Malaysia	Maongian 1
127.	Malaysia	Capital
128.	Malaysia	X Mate
129.	Malaysia	Smart Cookies
130.	Malaysia	Redezous
131.	Malaysia	Truesci
132.	Singapore	Team Balzers
133.	Malaysia	Fast Five



No	Country	Team Name
134.	Malaysia	SMKCBW 3
135.	Malaysia	Material Gurls
136.	Malaysia	The Dynamites
137.	Malaysia	The Unknown Quantities
138.	Malaysia	GEEKIA
139.	Malaysia	Seroja
140.	Malaysia	Galactica Nation
141.	Malaysia	Ballz
142.	Malaysia	T-agents
143.	Malaysia	Violets with white
144.	Malaysia	The Lab Rats
145.	Malaysia	Insoft IV
146.	India	Adroit Squadron
147.	Malaysia	HEHS Team
148.	Malaysia	Nadi Estag
149.	Malaysia	Leongfamily
150.	Malaysia	Miss Pretty Three
151.	Malaysia	Young Inventor
152.	Malaysia	Globetrotter's Hands
153.	Malaysia	Opus Zoomers
154.	Malaysia	We Are The Best
155.	Malaysia	Innie My G
156.	Malaysia	4AF
157.	Malaysia	The Science Surf
158.	Malaysia	B'Stem Chips
159.	Malaysia	Daughters Of Archimedes
160.	Malaysia	SH Team
161.	Malaysia	Brouhaha
162.	Malaysia	Pressure La Sifon
163.	Malaysia	3 Amigos
164.	Malaysia	Proton Miao Miao
165.	Malaysia	Stray Youngsters
166.	Malaysia	Rainbow Chaser
167.	Malaysia	The Stethoscope
168.	Malaysia	Team Calico
169.	Malaysia	Blite
170.	Philippines	PSHS-SRC
171.	Malaysia	SMK Desa Petaling

No	Country	Team Name
172.	Malaysia	Incognito Mode
173.	Malaysia	CHESO
174.	Malaysia	Al-Farabi
175.	Malaysia	big mind
176.	Malaysia	Gorgeous Gorgeous Girls
177.	Malaysia	Bluerays
178.	Malaysia	INSOFT V
179.	Malaysia	Sayangs Lab
180.	Malaysia	Pterocarpus Indicus
181.	Malaysia	Couch Potato
182.	Malaysia	DYE_0100 Project
183.	Malaysia	SMKCBW 2
184.	Malaysia	FAE Project
185.	Malaysia	Hanaifa
186.	Malaysia	The five chingchongs
187.	Malaysia	ExperiMental
188.	Malaysia	Fourlettes
189.	Malaysia	Aespa4
190.	Malaysia	OK
191.	Malaysia	Thrice 148
192.	Malaysia	INSOFT II
193.	Malaysia	Harry Science
194.	Malaysia	Sunflower
195.	Malaysia	Smkcbw 4
196.	Malaysia	Laplace
197.	Malaysia	Sina's Heather
198.	Malaysia	Girlboss
199.	Malaysia	Cocomelon
200.	Malaysia	4C1/2M
201.	Malaysia	STJ 1
202.	Malaysia	Young Innovator
203.	Malaysia	The Four Leaf Clover
204.	Malaysia	Photon Professors
205.	Malaysia	La Magnifique
206.	Malaysia	Queen 1 Maju
207.	Malaysia	Gadis Ayu
208.	Malaysia	ThreeNa
209.	Malaysia	Fennec

No	Country	Team Name
210.	Malaysia	MMQD
211.	Malaysia	Newton
212.	Thailand	Is Matcha Gum for Your Teeth?
213.	Malaysia	5keys
214.	Malaysia	Warriors
215.	Malaysia	Nazhan Worker's
216.	Malaysia	Unknown Cosmo
217.	Malaysia	Seg Hwa Team 3
218.	Singapore	Team ColoursRUs
219.	Singapore	Team Algae
220.	Malaysia	Milkyway
221.	Philippines	Hundred Islands Team
222.	Malaysia	The ExperiMentals
223.	Malaysia	JejakInersia
224.	Malaysia	SMKCBW 5
225.	Malaysia	Luminocity
226.	Malaysia	First Egg
227.	Malaysia	Clever Pair
228.	Malaysia	Young Techomind
229.	Malaysia	The Physicists Extraordinaire
230.	Malaysia	The Unknown Quantities
231.	Malaysia	SG Kruba Brothers
232.	Malaysia	The "R" Trio
233.	Malaysia	Bocil Kehidupan
234.	Malaysia	Intelligence Board
245.	Malaysia	The Homies
236.	Malaysia	Wang Group
237.	Malaysia	Newton's Apprentice
238.	Malaysia	Science Is Our Life
239.	Malaysia	Seg Hwa Team 2
240.	Malaysia	FAZZBOYZ
241.	Malaysia	ACE
242.	Malaysia	Neurolink
243.	Malaysia	The Atoms
244.	Malaysia	Engene Crew
245.	Malaysia	X-Force
246.	Malaysia	Water Booster
247.	Malaysia	11-One ASIA Feynman Group 3

No	Country	Team Name
248.	Malaysia	Seg Hwa Team 1
249.	Malaysia	Dora The Explorer
250.	Malaysia	Hypernova
251.	Malaysia	SMKCBW 6
252.	Malaysia	Sam Tet Science Group
253.	Malaysia	Anak Estag
254.	Malaysia	Headshot Pedas
255.	Malaysia	Experi Mental
256.	Malaysia	Saireiji
257.	Malaysia	Zimzalabim
258.	Malaysia	Al'm Intelligence
259.	Malaysia	Azzarina And Abhie
260.	Malaysia	Belle
261.	Malaysia	ITACHI
262.	Malaysia	The Waves
263.	Malaysia	11-one ASTI Feynman Group 1
264.	Malaysia	11-One ASTI Feynman Group 2
265.	Malaysia	YYDS Group
266.	Malaysia	Slayyyyy

### Category 3 : Above 18

No	Country	Team Name
267.	Malaysia	Dino Ball
268.	Malaysia	AFC2022 Kick It Right
269.	Malaysia	SWPK_BNZ
270.	Malaysia	Trigoton
271.	Malaysia	Longpole Ball
272.	Malaysia	Cone Shoot Game
273.	Malaysia	Team Fantastrio
274.	Malaysia	AFC2022_What a Shot!
275.	Malaysia	KHO Family
276.	Malaysia	Blood Poly
277.	Malaysia	Genofex
278.	Malaysia	Distance Bowling
279.	Malaysia	No Fun Without 'U'
280.	Malaysia	Target Race
281.	Malaysia	Rugball



No	Country	Team Name
282.	Malaysia	Hit That Happens
283.	Malaysia	AFC2022_Mini Baseball
284.	Thailand	AFC2022_The Jungle Saga
285.	Malaysia	Don't Let It Fall
286.	Malaysia	AFC2022_Hit That Blindspot
287.	Malaysia	Idiom Puzzle Game (IPG)
288.	Malaysia	Bat-Ball
289.	Malaysia	Food Slide
290.	Malaysia	Sab & Lau
291.	Malaysia	Easykit Science
292.	Malaysia	AFC2022_Throw, Kick, Catch
293.	Malaysia	i-Machinery Arts
294.	Malaysia	Experi Mental
295.	Malaysia	SVA Hopscotch
296.	Malaysia	Foot Bowling
297.	Malaysia	AFC 2022_Futkey
298.	Malaysia	AFC 2022_SLIDE & WIN
299.	Malaysia	ACID O ALKALI
300.	Malaysia	Bernoul Learning
301.	Malaysia	Amethyst
302.	Malaysia	Hitball
303.	Malaysia	Hand- Football (HFB)
304.	Malaysia	VUR VE KAC
305.	Malaysia	FLM Team
306.	Thailand	WE Tried
307.	Malaysia	Newton of Ampar Tenang
308.	Malaysia	Griff James Team
309.	Malaysia	Edu Machine
310.	Malaysia	Power Rangers
311.	Malaysia	STS Yaalini & Yaalisai
312.	Thailand	Innovative TGfU Approach
313.	Malaysia	The Mix

# 5.0 JUDGING PROCESS AND PROCEDURES

## Judges Selection

An email invitation was sent to past Young Inventors Challenge (YIC) and ASTI Feynman Challenge (AFC) judges as well as to any possible new judges. A total of 114 judges from different backgrounds agreed to volunteer and contribute as judges for ASTI Feynman Challenge (AFC) 2022. The AFC judging team was headed by a committee called the 'Judging Panel' which was made up of experienced Judges. The responsibility of the judging panel was to develop the overall policy and oversee the judging process.

The AFC 2022 judging team and judging panel was led by a Chief Judge and worked independently from the organising committee in line with ASTI's policy for judging. A WhatsApp group was created for the judging panel to facilitate communications and discussions. Gan Quan Fu was appointed as a chief judge and Mr. Devananthiran as the assistant chief judge to head the judging panel and manage the judging process.

## Judging Process and Procedures

AFC Judging Procedure was developed as a guidance for the judges. The Judges Code of Conduct and Terms of Reference were also developed for the judging team. Meanwhile, AFC judging panel developed a rubric for the judges to ease the video marking purpose. This rubric was also used as the scoresheet by the judges. A recorded training video and the marking sheet was emailed to all the judges. Any questions pertaining the training was raised to the Chief Judge and was guided accordingly.

Since AFC is an online competition, the judging process for AFC was also conducted online. The videos for marking were sent to the judges on 18th July 2022. Meanwhile, the deadline for the video marking was set on 24th August 2022. Videos were sent to the judges by e-mail along with the rubric and sample rubric to enhance the understanding of the marking procedure. A total of 313 videos submitted by the participants were assessed by the judges. Each video was marked by 3 judges independently. The marks provided by the judges were compiled by the ASTI Secretariat. Upon compiling the marks, the top 15 videos for each category were selected by the Judging Panel based on the marks. A total of 9 experience judges from the judging panels deliberated and selected the winners of AFC for each category as well as for the Inclusivity Award winners. Discussion between the judges were held on 22nd August to 24th August 2022 via Google Meet to finalise the winners.

The winners of the competition and the Inclusivity Award recipients were announced on 7th September 2022 at 5.00 p.m. via YouTube live.

All judges involved in the video marking were given an e-certificate and a token of appreciation for their contribution.

## 6.0 FUNDING AND BUDGET

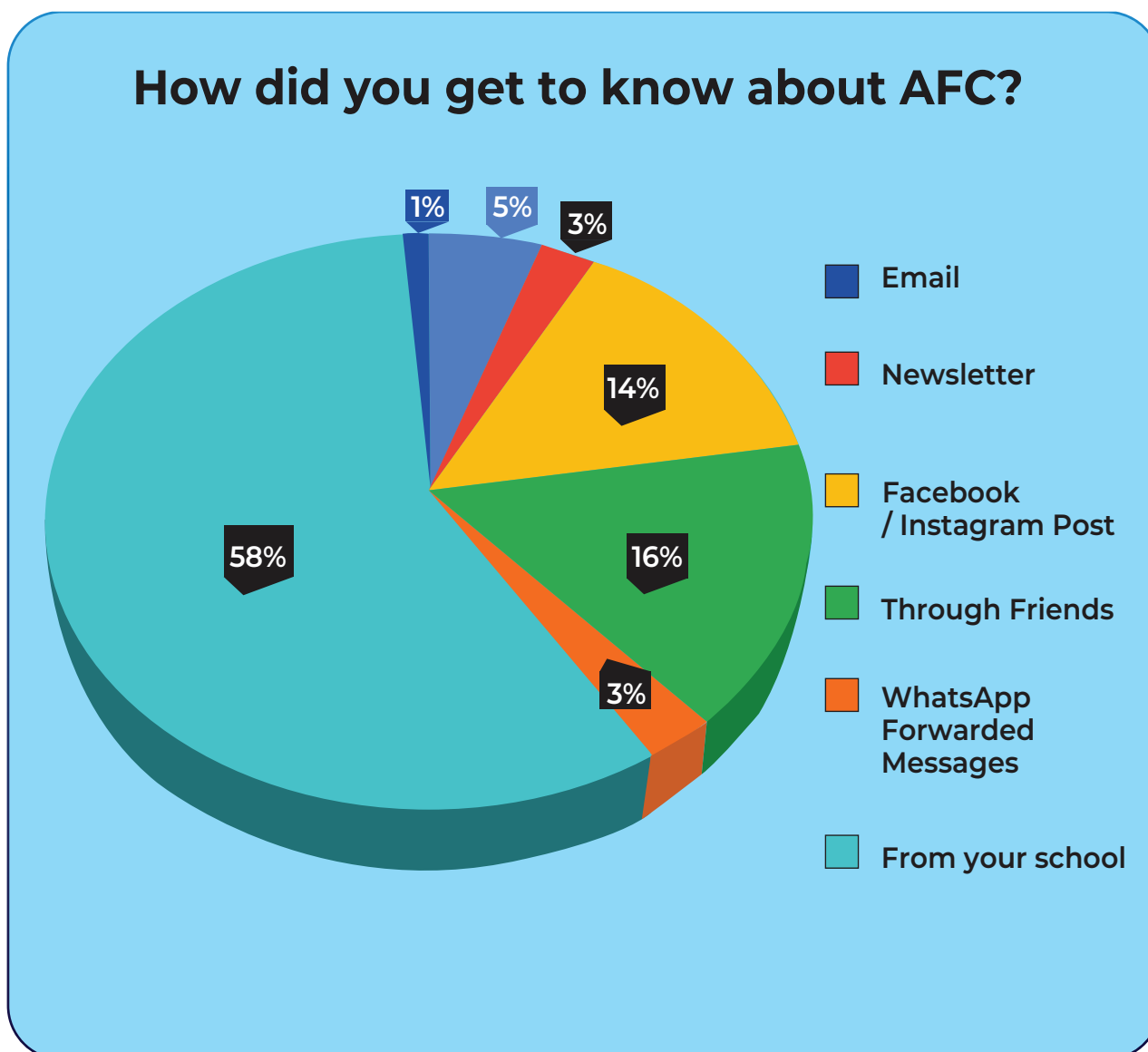
ASTI Feynman Challenge was funded by Ministry of Science, Technology, and Innovation(MOSTI) and Malaysian Incentive Community Empowerment (MyICE) Grant under the Ministry of Home Affairs.The income and expenses are shown below:

Income	(RM)
Ministry of Science, Technology, and Innovation (MOSTI)	5,000.00
Malaysian Incentive Community Empowerment (MyICE) Grant	10,000.00
<b>Total Income</b>	<b>15,000.00</b>
<b>Less: Expenditure</b>	
Modules Development & Licensing	5,000.00
Winning Prize for Category 1: Average Age of 10-12	1,800.00
Winning Prize for Category 2: Average Age of 13-17	1,800.00
Winning Prize for Category 3: Above 18	1,800.00
3 Special Inclusivity Award (RM 500 X 3)	1,500.00
Designing and Promotion	1,000.00
Online Training 1 & 2	500.00
Video Evaluation and marking by Judges	2,000.00
Project Management and Secretariat Expenses	20,500.00
<b>Total Expenditure</b>	<b>35,900.00</b>
<b>Excess Of (Expenditure)/Income*</b>	<b>-20,900.00</b>

\*The excess of expenditure was overwritten by Association of Science, Technology, and Innovation internal funds.

## 7.0 SURVEY ANALYSIS

At the end of the project, ASTI conducted a survey by sending out google form link to all the participants to collect their feedback for future improvement of AFC. The participants were asked 10 questions and a total of 107 responses were received. The responses were presented in the graph followed by an explanation as below:

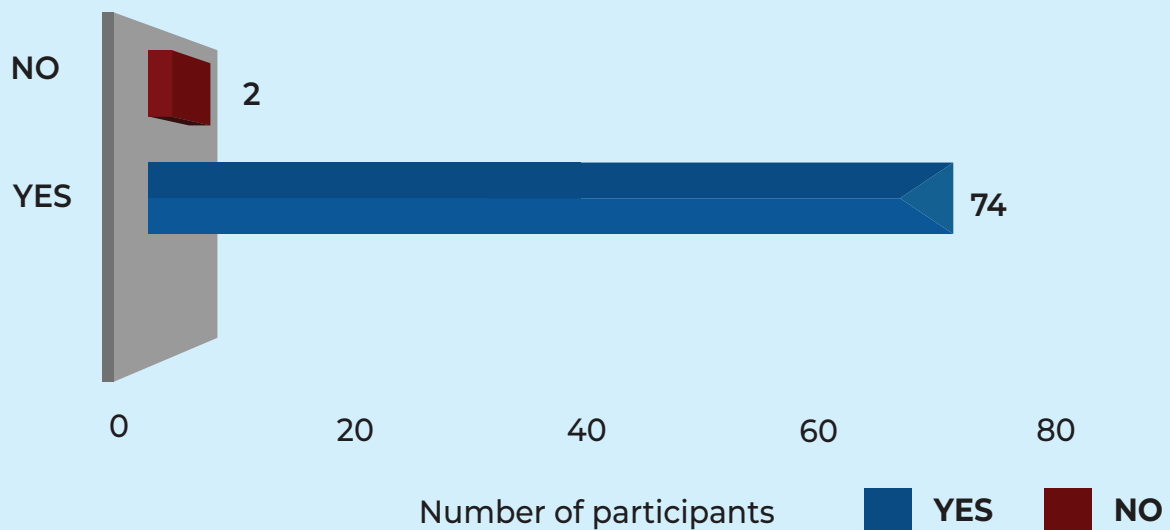


**Figure 1 : AFC Recognitions**

Figure 1 shows that most of the participants get to know about AFC through their school, while the rest through email, ASTI's newsletter, Facebook/Instagram posts, friends, and WhatsApp forwarded messages.



## Were the programme's modules easy to follow?



## How did you get to know about AFC?

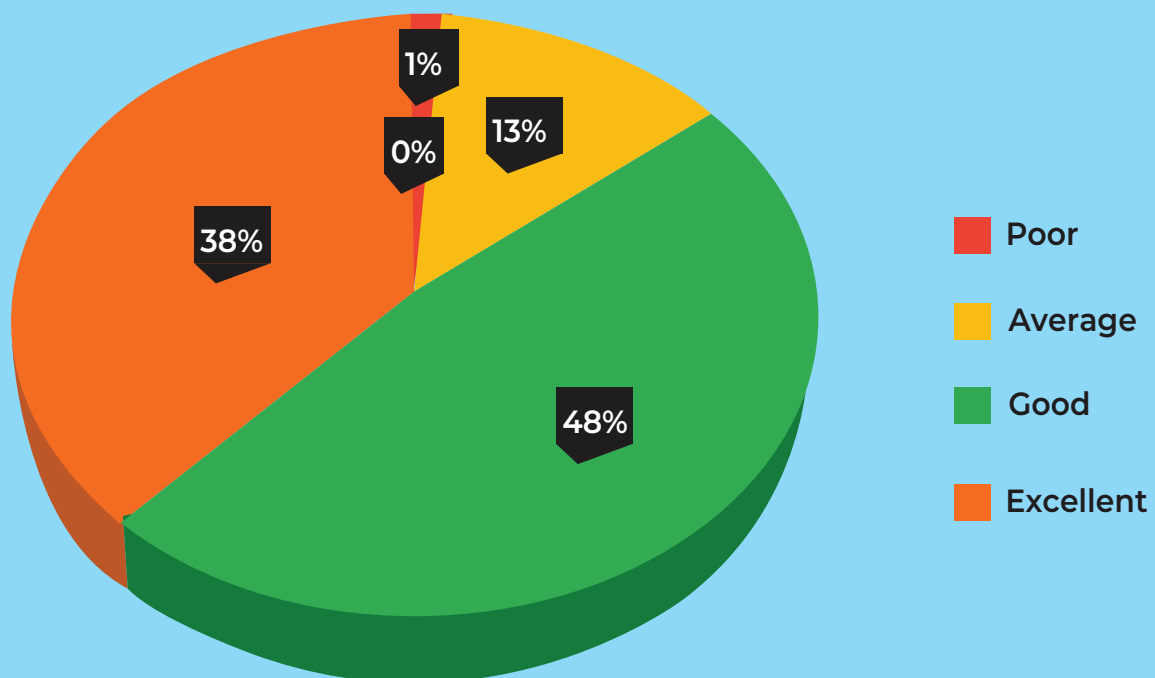
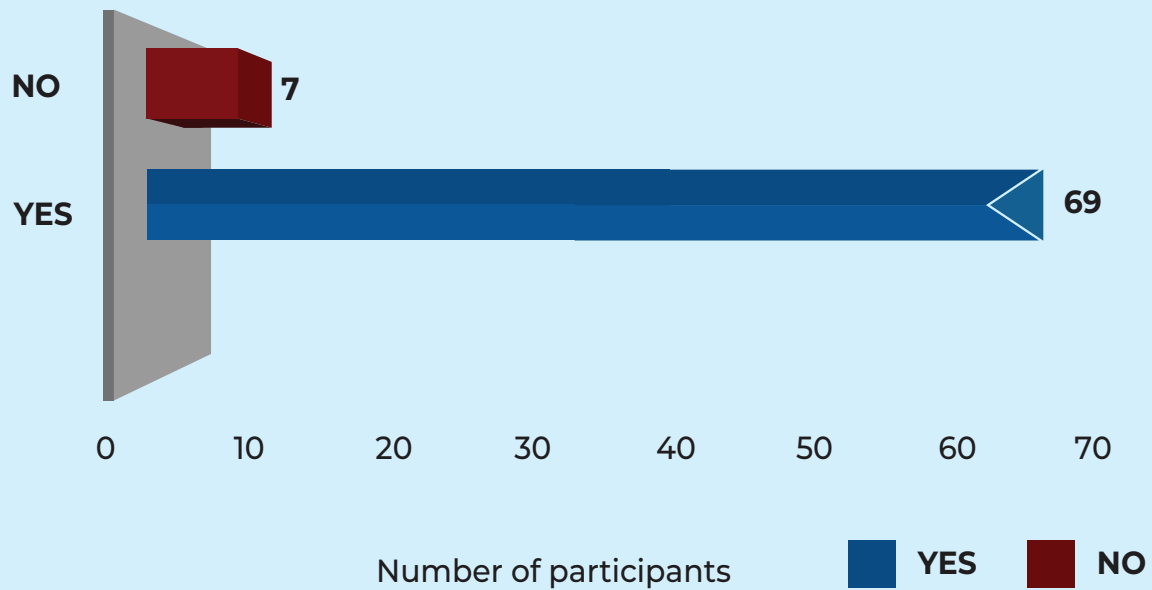


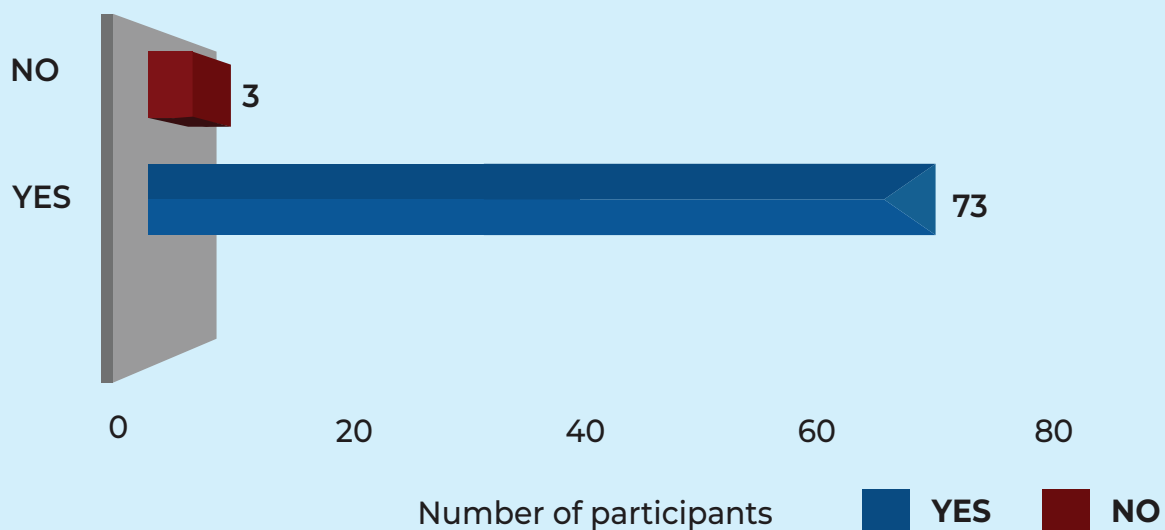
Figure 2 : Training Modules

According to the survey results, the modules were easy to follow as 74% respondents says "YES" and 48% of the respondents stated that the modules were excellent. They modules were designed in an understandable version.

## Did you watch the AFC training video?



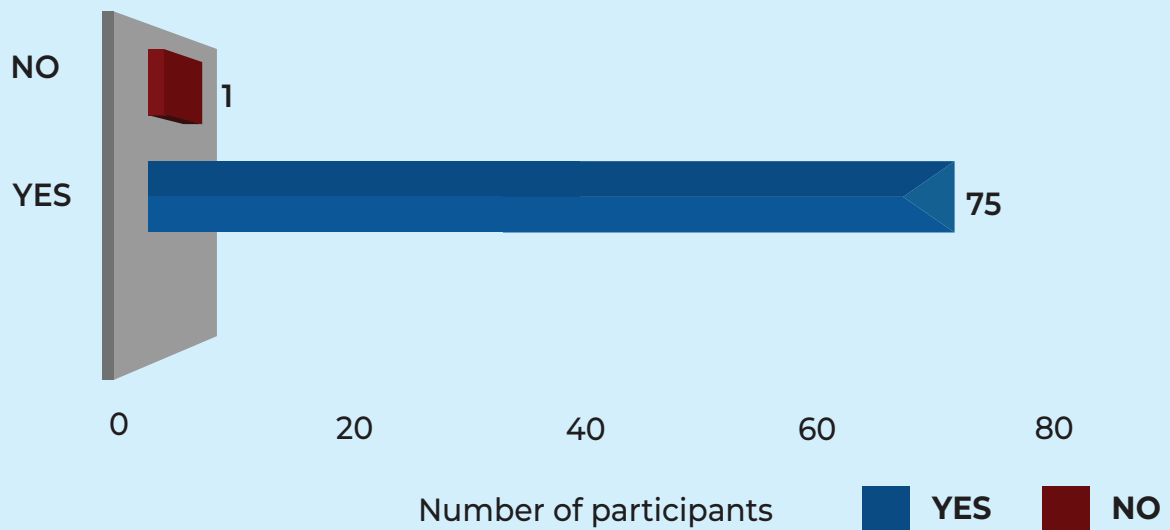
## If YES, was the training video helpful?



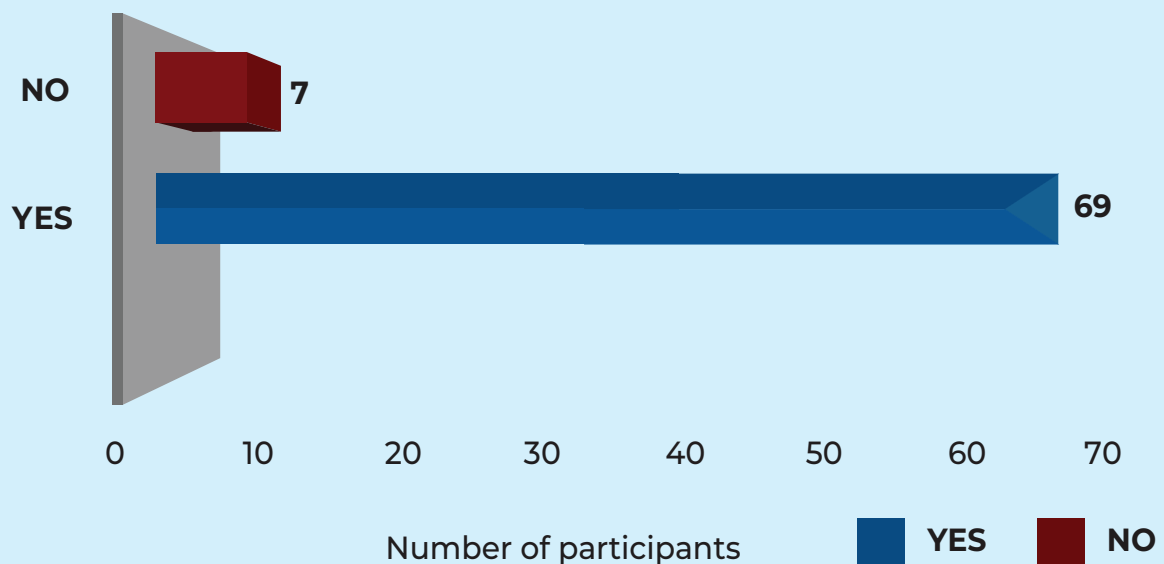
**Figure 3: Training Videos**

According to Figure 3, majority of the participants have watched AFC training video and 73 of them rated that the training video was helpful.

## Were the organiser helpful and friendly?



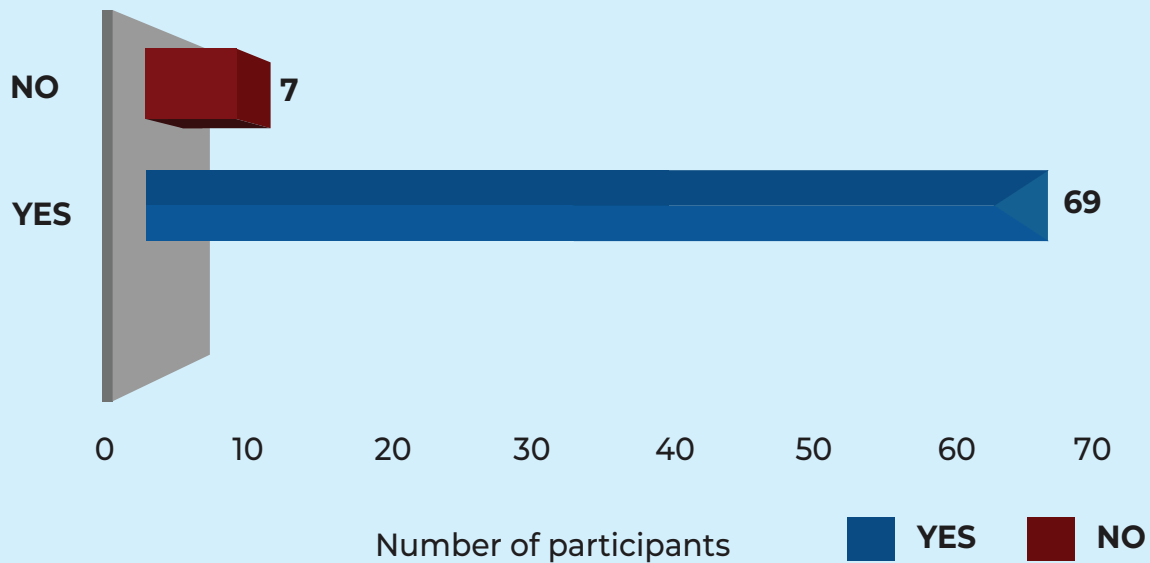
## Did the organiser answer your questions and clear your doubts?



**Figure 4 : Organiser's Assistance**

As seen in Figure 4, the majority of the participants rated that the organisers were very helpful. The participants also agree that the organiser has answered their questions and doubts accordingly. It demonstrates that ASTI has guided the participants effectively to ensure a better understanding on the AFC competition.

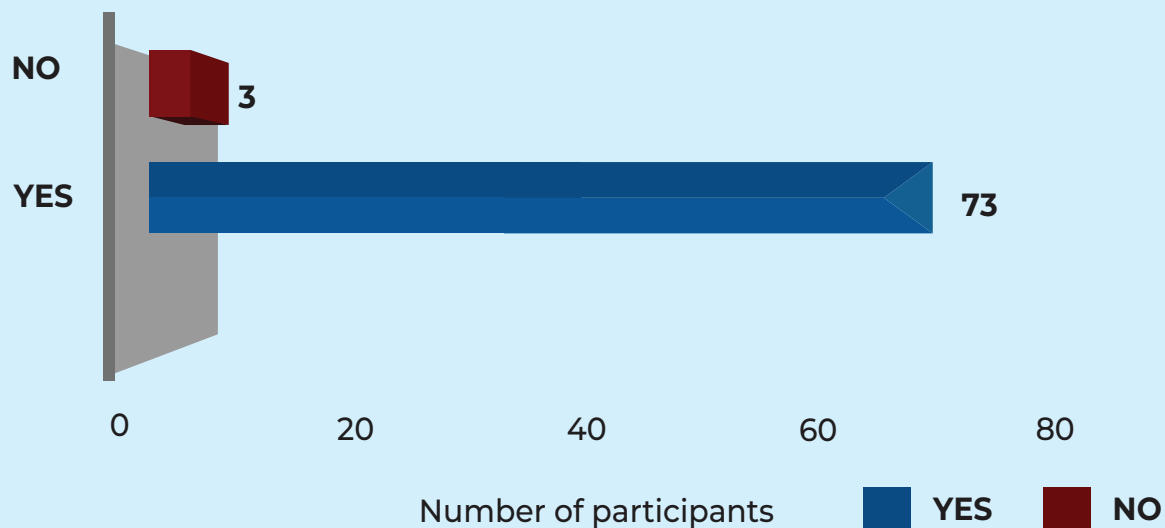
## Was there enough time to submit your video?



**Figure 5: Time given to submit video**

Most participants felt the time given for video submission is sufficient as ASTI had extended the timeline as per requested by the participants.

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

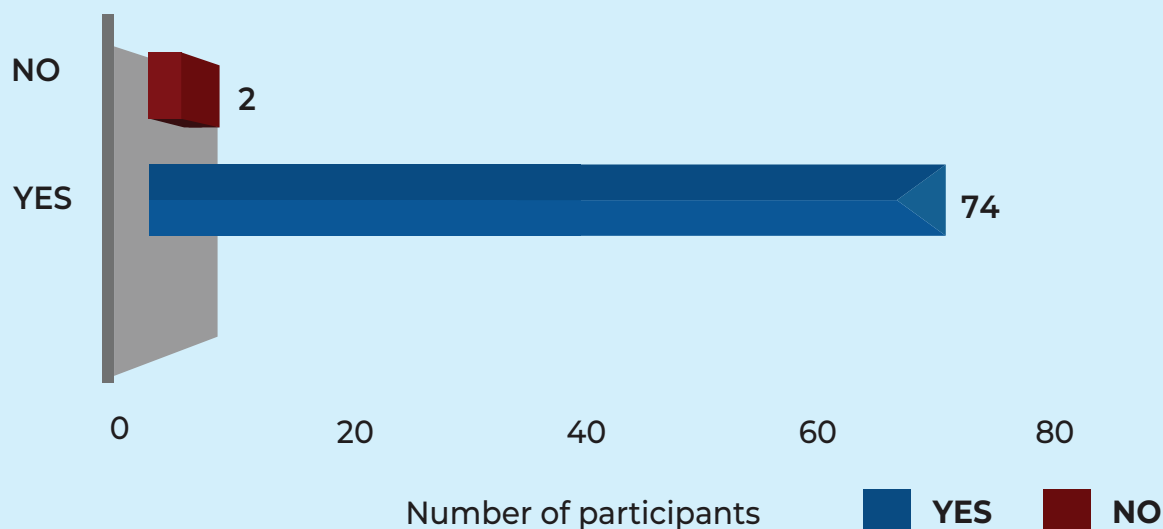


**Figure 6 : Encouragement to work as team**

According to the data, majority of the participants agreed that AFC promote cooperation among team members. The competition has influenced the participants to work in groups effectively.



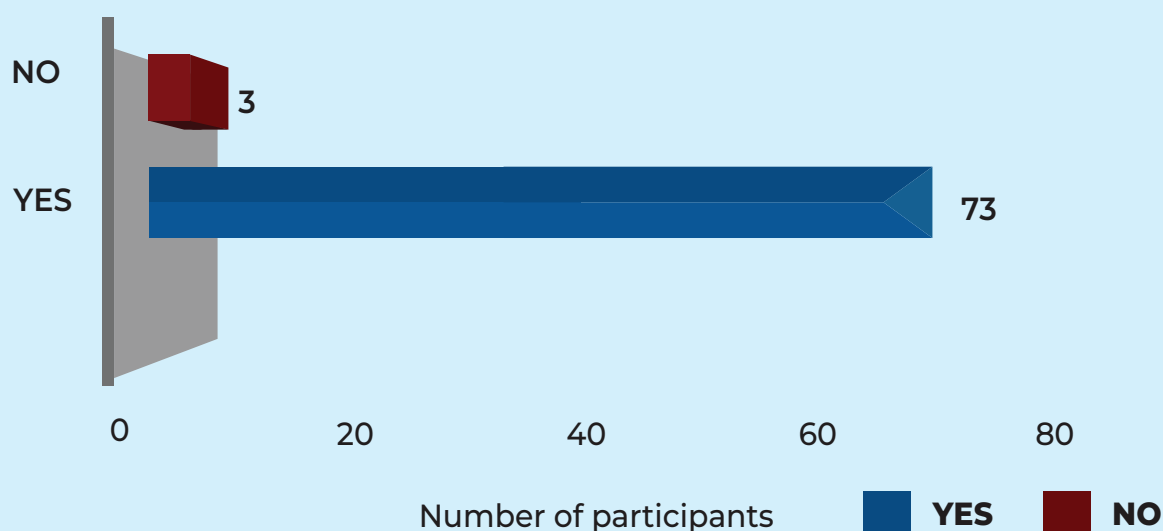
## Would you recommend this programme to your family & friends?



**Figure 7 : Recommendation of AFC Competition**

Based on figure 6, when the participants were asked whether if they would recommend AFC to their family and friends ? Majority of them, 74 respondents marked “YES” and this shows the participants are willing to give continuous support to AFC for the upcoming year.

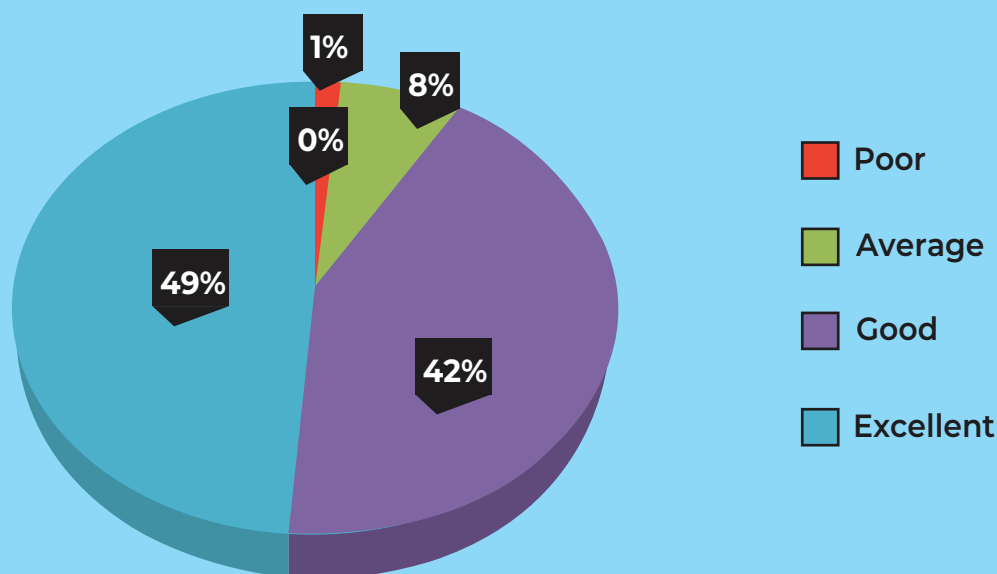
## Was the video submission process easy and simple?



**Figure 8 : Video Submission Process**

Figure 7 shows that most participants found the video submission process was easy and simple.

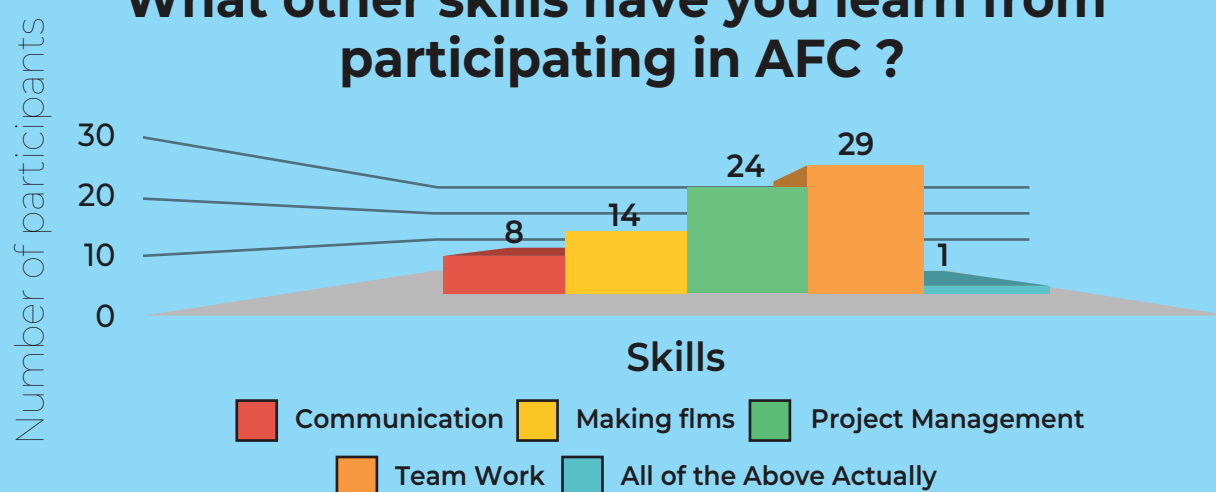
## Rate how you find the Feynman Technique in helping you learn concepts?



**Figure 9 : Rate on how Feynman Technique helps in learning scientific concept**

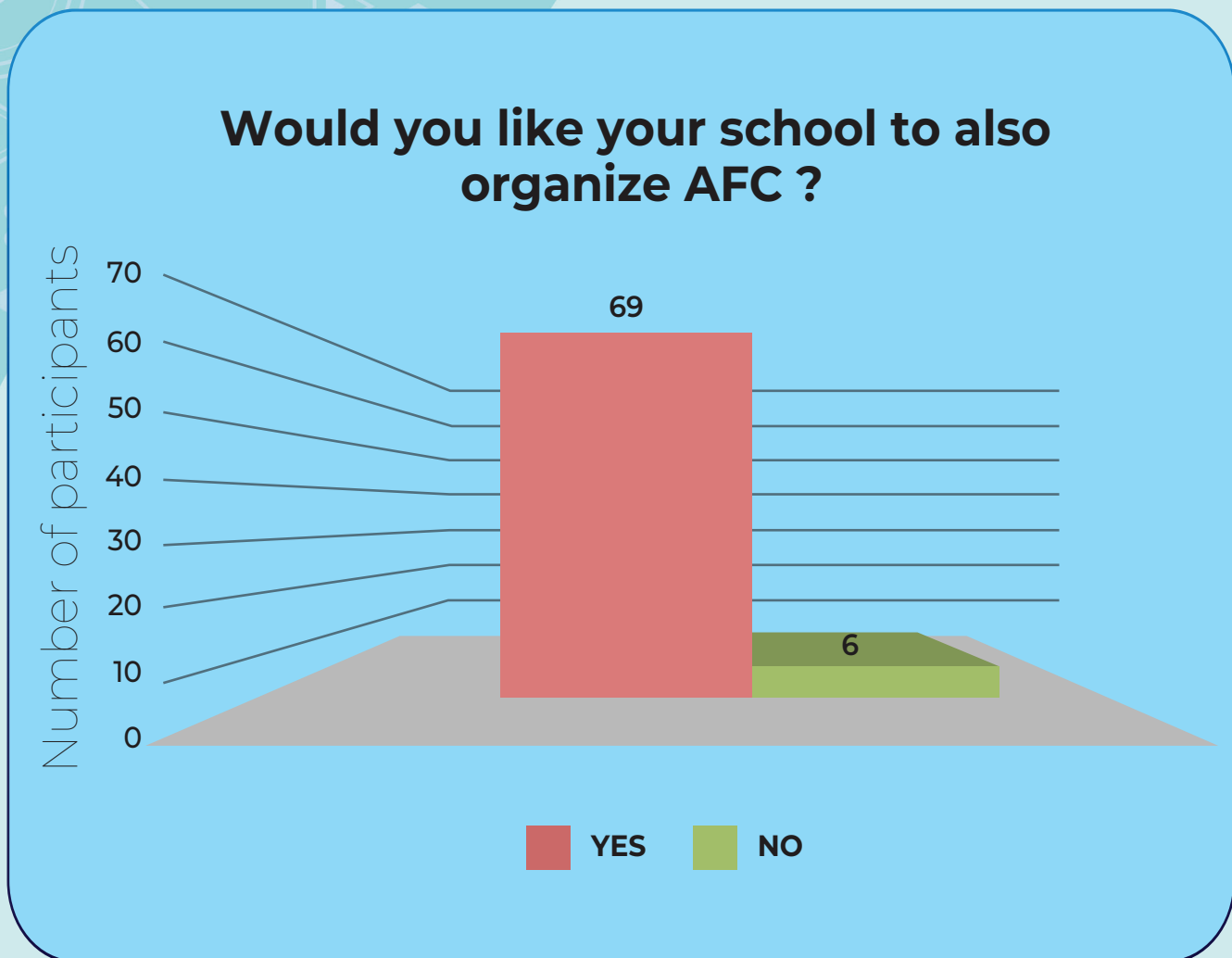
As seen in Figure 8, most participants rated excellent and good when they were asked if the Feynman Technique has helped them in learning concepts. Hence, the organiser decided to do in-depth training on the Feynman Technique in the future.

## What other skills have you learn from participating in AFC ?



**Figure 10 : Additional skills developed from participating in AFC**

In the above question, participants may choose skills which they have learnt the most during their participation in AFC. As shown in the figure above, the majority of the participants mentioned that they have developed project management, filmmaking, and communication skills through AFC. The organiser hopes that this experience will help the participants to apply the Feynman Technique often in their learning journey.



**Figure 10: Organising AFC**

Figure 10 demonstrates that majority of participants wants AFC to be organised at their respective schools as a school level competition.

## 8.0 SWOT ANALYSIS

Based on the survey, SWOT analysis was carried out and below is the summary.

### Strength

- Able to reach 7 international participations.
- Good support and publicity from Ministry of Education Malaysia.
- The instruction given is clear and the organiser is very friendly.
- Ability to keep-up to the deadline.
- Capacity to invite large numbers of judges.

### Weakness

- To increase participation from international countries.
- Noticed that some students still poor in communicating their scientific concept effectively.
- Detected that some participants are still unable to understand Feynman techniques.
- Noted that some students unable to apply Feynman technique effectively in their preparation.

### Threat

- The participants facing difficulties to understand and apply the Feynman Technique concept effectively.
- Post-Covid, probably participants may look into physical appearance.

### Opportunity

- The participants aware the presence and benefit of Feynman technique.
- The participants able to adopt the Feynman technique in their learning process.
- The participants successfully learned about video production and editing process using fore-front applications.

### Recommendation

- More active promotion to reach wider audience globally
- Organise science communication training before participants preparing their presentation and also training on the Feynman Technique
- In depth training by an expert in video production

## 9.0 CONCLUSION

This year's ASTI Feynman Challenge (AFC) was another big success, with the project's promotion reaching over seven countries. We wish to reach out to more countries in upcoming years. The number of videos received was also very encouraging.

In order to improve family cohesion, we hope that parents will be aware of their kids' learning abilities as well as actively participate in their education journey via AFC and other such programmes. Survey analysis suggested that participants enjoyed the journey through out the AFC 2022. We as the organiser have also witnessed parent's contribution in making their children`s to complete this journey. A big salute to all participants, mentors and parents for continuous enthusiasm in AFC. This year, we have also seen more schools and teachers involvement in AFC as schools open up after the lockdowns.

Additionally, we would like to thank each and every one of our sponsors, judges, and volunteers for contributing to the success of AFC 2022. We look forward for more exciting journey in AFC 2023.

Thank You





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