The Government of the Republic of Trinidad and Tobago
MINISTRY OF EDUCATION

NIHERST

Teach ME

Innovation Competition

2020

OFFICIAL GUIDELINES

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INNOVATION COMPETITION

EXECUTIVE SUMMARY

In 2014, NIHERST entered into a participatory initiative with the Scientific Research Council (SRC) in Jamaica, entitled "Improving Innovation Capacities in the Caribbean" (INVOCAB). INVOCAB set out to achieve the goal of promoting and enhancing Science, Technology and Innovation at the primary and secondary school levels. Upon executing the project, a decision was taken to extend the project's reach to include a programme that will focus specifically on Mathematics at the primary school level. As a result, "Teach ME" was introduced and implemented as a supported project from INVOCAB, with the overarching goal of improving students' performance in the Mathematics component of the SEA Examination.

The Teach ME project aims to contribute towards improving the levels of creativity in Trinidad and Tobago by building and strengthening capacities in the areas of Science, Technology and Innovation and specifically Science Education as an enabler for ensuring that our education at primary and secondary levels prepares our young people for the challenging world of Science and Technology. The project was initiated in 2016 with two (2) primary schools on board. In 2017, five (5) primary schools participated in the project; in 2018 this number increased to eight (8) participating primary schools; and in 2019, the project further expanded to eleven (11) primary schools and the new addition of four (4) secondary schools[1] from the INVOCAB project.

One of the projects' main deliverables is developing and hosting a Students' Innovation Competition. For the 2020 cycle, the competition is extended to **all** primary and secondary schools throughout Trinidad and Tobago. This year's competition will focus on the theme: **"Public Health".** Primary and secondary school students, with the assistance and supervision of their Science Club teachers, will embark on developing solutions to improve the safety, conditions and/or quality of life of their school or community in relation to the above theme.

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[1] Secondary schools are invited to participate in the Innovation Competition only. Teach ME specifically targets the primary school curriculum.

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INTRODUCTION

> *"Health care is vital to all of us some of the time,*
> *but public health is vital to all of us all of the time."*
> **C. Everett Koop**

The National School Innovation Competition aims to foster a culture of science, technology, innovation and entrepreneurship. The competition seeks to recognise and reward student innovators and problem-solvers for their application of scientific knowledge and technological solutions in an effort to solve a problem faced by their community or school, and ultimately, to market and commercialise their idea or creation. Boosting the creative and innovative capacities of the youth of Trinidad and Tobago, in addition to fostering their entrepreneurial spirit is critical to the country's future competitiveness.

The Teach ME National School Innovation Competition encourages students:

❖ To identify and solve a school or community problem.

❖ To develop *Habits of Mind* and 21st Century Skills such as critical thinking and problem solving, creativity and innovation, perseverance and adaptability.

❖ To develop their ideas for commercialisation.

For 2020, the Teach ME National School Innovation Competition will be launched and hosted on a virtual platform known as **Roblox**. Roblox is an online game platform and game creation system that allows users to design and build their own games as well as play games created by other users. This year's competition will expose participants to coding, game development and game design, skills that they will use to build a virtual school or community in which they would solve a problem related to the overarching theme **Public Health**. Additionally, students will develop and improve *Habits of Mind*, a set of problem solving, life related skills, necessary to effectively operate in society and promote strategic reasoning, insightfulness, perseverance, critical thinking, creativity and ingenuity.

Potential entrants to the National School Innovation Competition should give consideration to the following questions when conceptualising ideas and designing their virtual prototype:

- ❖ Does your idea or design solve a problem?

- ❖ What are the benefits of your innovation/invention to society, environment etc.?

- ❖ How easy can your idea be implemented in your school or community?

- ❖ Have you done research to ensure the novelty of your idea?

- ❖ Can your creation be marketed and earn profits?

Students are required to develop their idea to deliver a virtual business pitch of their simulated prototype to the Government of Trinidad and Tobago or prospective investors.

ELIGIBILITY

1. All entrants must be nationals of Trinidad and Tobago between the ages of 8 – 17.

2. Individuals or teams of up to five (5) persons can enter the competition.

3. Judging and prize giving will be divided into the following categories:

    <u>Juniors</u>
    Ages: 8 – 10

    <u>Seniors</u>
    Ages: 11 – 17

4. Multiple entries are allowed and should be done on separate entry forms.

5. Members of the organising committee and their families are not eligible to enter this competition.

6. Entrants must sign the relevant agreement forms to be considered for judging.

PROTOTYPE SUBMISSION

Submission Guidelines

An independent panel of distinguished professionals will be appointed to evaluate all entries.

<u>Stage 1:</u>

i. Complete and submit all team registration forms and permission slips **<u>no later</u>** than **11th September, 2020**.

ii. Complete and submit **Prototype Proposal Document <u>no later</u>** than **11th September, 2020** in order to be submitted for the first review by the judges. Remember, a school can submit multiple entries; however, a team can only hold a maximum of five (5) students. The Proposal Document must include a brief description of the problem to be addressed and the solution that the virtual prototype will provide.

iii. Teams must complete a **Project Design Packet** to document their journey throughout the competition (one design packet per team). Design packets should detail the project concept, design process and development, trials and error, and any other records. Design packets must include weekly progress notes and can be supplemented with pictures or videos. Students are encouraged to be as creative as possible.

iv. Reviewers will conduct an initial assessment of the prototype proposals and will offer recommendations. All teams will receive feedback from the judges' first review by **18th September, 2020.** After which**,** teams can edit and further develop their ideas in order to begin building their virtual prototype.

Stage 2 (Round 1 of Judging):

i.   All entrants must submit **a Draft Design of the Virtual Prototype** (e.g. a picture, sketch, small model) **or a Video of a Run-Through[2], along with the Prototype Proposal <u>no later</u>** than **19th October, 2020**. The judges will assess these draft designs based on the following criteria: -

- **originality (40%)**
- **functionality (40%)**
- **ingenuity (15%)**
- **sustainability (5%)**

ii.   Judges will provide further comments and recommendations. After which**,** teams can then proceed to make any necessary changes to develop their final prototype.

Stage 3 (Round 2 of Judging):

i.   Teams must submit their **Final Prototype Proposal <u>no later</u>** than **27th October, 2020** via email prior to the final judging date.

ii.   On the final judging date, teams must deliver a **short presentation*** on their virtual prototype (see page 11 for further guidance), along with their **final Project Design Packets**.

iii. Please note that the final judging/award ceremony will be held via Zoom on **30th October, 2020**. Any changes to date or video communications platform will be communicated.

**Presentations can be done in any creative manner preferred by the entrant.*

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[2] The activity of performing or playing something from beginning to end in order to practise it.

Judging Criteria

Prototypes will be judged on the following criteria:

- **Originality (15%)**
- **Functionality (15%)**
- **Ingenuity (10%)**
- **Sustainability (10%)**
- **Methodology (10%)**
- **Creativity (5%)**
- **Usefulness (10%)**
- **Presentation (10%)**
- **Simplicity (5%)**
- **Commercial Potential (10%)**

DEFINITIONS

A brief definition of each criterion is given below:

Functionality:
- Is defined by the capacity of the innovation/invention to serve the proposed purpose well.

Sustainability:
- Is defined by the capacity for the innovation/invention to be maintained for a considerable period of time (including and not limited to long-term market/economic potential as well as ecological sustenance, i.e. not exhausting natural resources or causing ecological damage).

Methodology:
- Is defined as the system of methods and principles employed in the development of the idea or innovation.

Originality (of the idea):
- Is defined by the innovation/invention being new in character or design (must demonstrate appreciable novelty).

Creativity (of the idea's development):
- Is defined by the level of imagination that the invention/innovation displays.

Usefulness:
- Is defined by the benefits to society (social, ecological, socio-cultural or economic).

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Ingenuity:
- Is defined by the skill utilised in devising or contriving the invention/innovation.

Simplicity:
- Is defined by the uncomplicated mechanisms used; the ease with which materials can be acquired and the steps involved in the manufacturing or process of development.

Commercial Potential
- Is defined by the prospect of sales and profit on a large enough scale to make the risk generated from the invention/innovation worth undertaking. It involves undertaking market research to identify the markets, the market need and the market competition.

THE JUDGES' DELIBERATIONS, INCLUDING THEIR EVALUATIONS, AND REPORTS SHALL BE KEPT CONFIDENTIAL AT ALL STAGES OF THE COMPETITION AND THEIR DECISIONS ARE FINAL.

THEME AND PRESENTATION

Welcome Young Innovators!
Public Health

Public health has become of paramount importance in recent times with the emergence of the Corona Virus Disease 2019 (COVID-19). It is the science of protecting and improving the health of people and their communities. This work is achieved by promoting healthy lifestyles, researching disease and injury prevention, and detecting, preventing and responding to infectious diseases[3].

Public health is important due to aiding, protecting and prolonging life. It helps through early detection of illnesses, rapid response to emergencies and disasters, medical research on disease and prevention, and public awareness on healthy living. Overall, public health is concerned with protecting the health of entire populations by:

- managing health emergencies and environmental hazards,
- controlling infectious diseases, and
- promoting wellness, healthy behaviours and healthy workplaces.

It is diverse and takes into account the health of the whole population, rather than focusing on health at an individual level, which can be as small as a local neighbourhood or as big as an entire country or a global region. All entries to the Teach ME Innovation Competition will be broadly classified under the theme **Public Health.**

Participating students, with the assistance and supervision of their teachers, will embark on a project to improve the conditions of their school/community in relation to the theme and following the outlined guidelines.

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[3] Centers for Disease Control and Prevention (CDC) Foundation https://www.cdcfoundation.org/what-public-health

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Building Your Virtual Prototype

Students must use the designated game building software ***Roblox Studio*** to design their virtual prototypes.

1. Create Roblox user account www.roblox.com
2. Download and install Roblox Studio www.roblox.com/create
3. Collaborate using Team Create feature
4. Using Roblox, create a solution to a Public Health threat or problem in your school or community

Tutorials would be circulated via email to all participants as a guide to using the gaming platform.

Important Points to Note:

- Students must construct **60%** of their prototypes on their own versus using free models from the online database.

- Absolutely **no** downloading of free models of building structures e.g. houses, schools, hospitals, business offices, commercial centres etc. Students must construct buildings on their own.

- Downloading of free models from the online database is allowed for characters/avatars, cars, accessories, items used for aesthetics (trees) etc.

- Collaborate as a team. Must be a team effort.

- Students are not allowed to edit or delete another teammate's work without his/her permission.

Verbal Presentation of Prototypes

Teams must: -

- explain their innovation, clearly describing the community/school problem that their virtual prototypes were created to solve.

- describe how their virtual prototypes are intended to work.

- detail the use of coding in the development of their virtual prototype.

- include a brief plan or proposal to produce and sell their innovation to the government of Trinidad and Tobago or investors.

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SUBMISSION OF ENTRIES

Competition forms must be submitted **on or before** the stipulated deadlines as follows:

You can e-mail your submissions to teachme@niherst.gov.tt **on or before** the stipulated deadline dates.

Your submission should be entitled "NIHERST Teach ME National School Innovation Competition 2020".

OR

You can deliver your submissions to the following locations:

NIHERST Head Office
Level 13, Education Towers,
No. 5 St. Vincent Street,
Port of Spain

or

NIHERST National Science Centre
Corner Churchill Roosevelt Highway and Old Piarco Road,
D'Abadie

Your submissions should be rendered in sealed envelopes addressed to "NIHERST Teach ME National School Innovation Competition 2020" and clearly labelled "CONFIDENTIAL" to ensure that it is viewed only by approved NIHERST personnel.

PRIZES

Prizes for winners in the Junior and Senior categories will be awarded as follows:

- 1st place winners
- 2nd place winners
- 3rd place winners

Additional prizes may also be awarded at the discretion of the organisers. NIHERST and the organising committee reserve the right to refuse awarding of prizes where the required standards are not met and will not be liable to any entrant for the loss of opportunity, or under any other grounds.