



IP activities at the Primary and  
Secondary School levels.  
The Trinidad and Tobago  
Experience

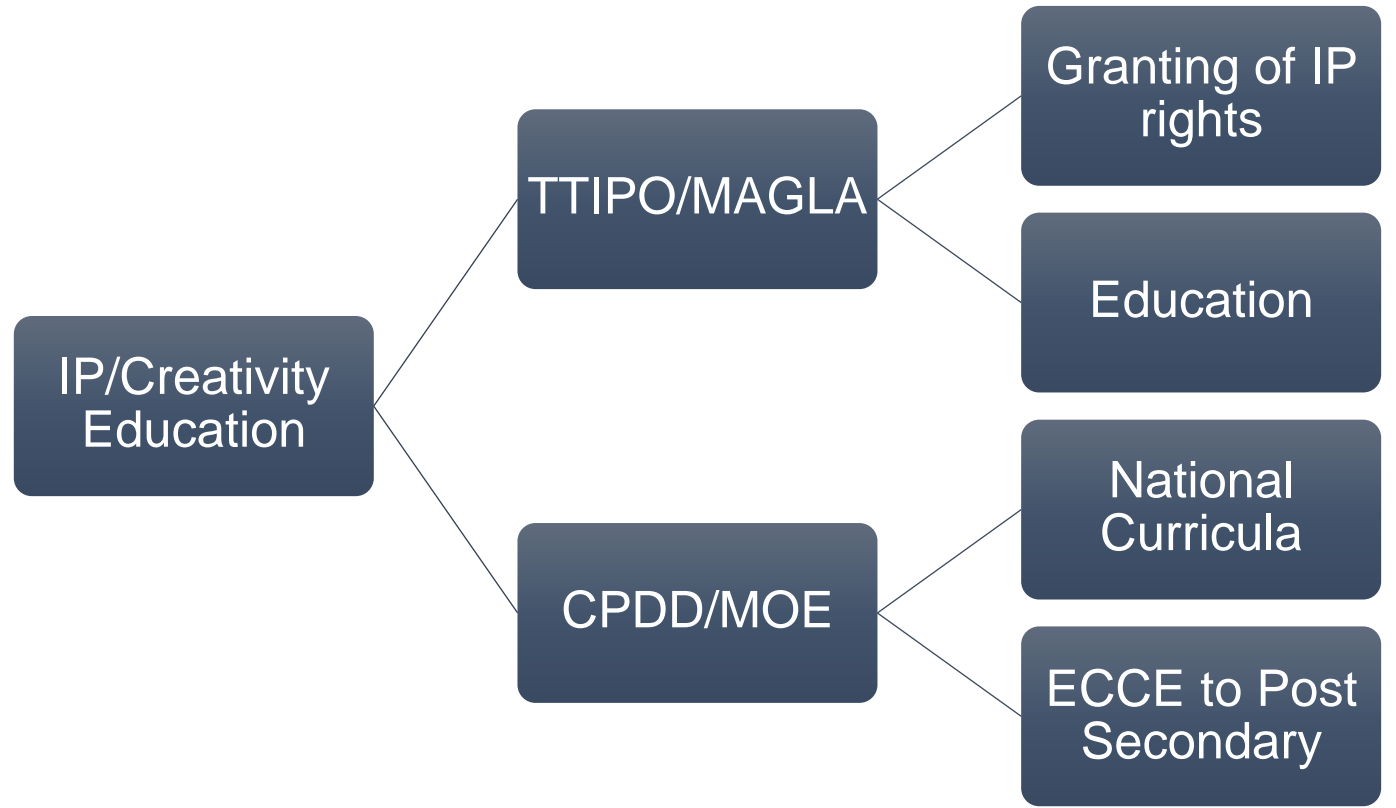


# Credits

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# Introduction



# Approaches of TTIPO

- Existing Strategy for development of IP and Creativity for Youth

Guest presentations in primary/secondary schools, university, wider society

<https://youtu.be/hdsEsKufUal>

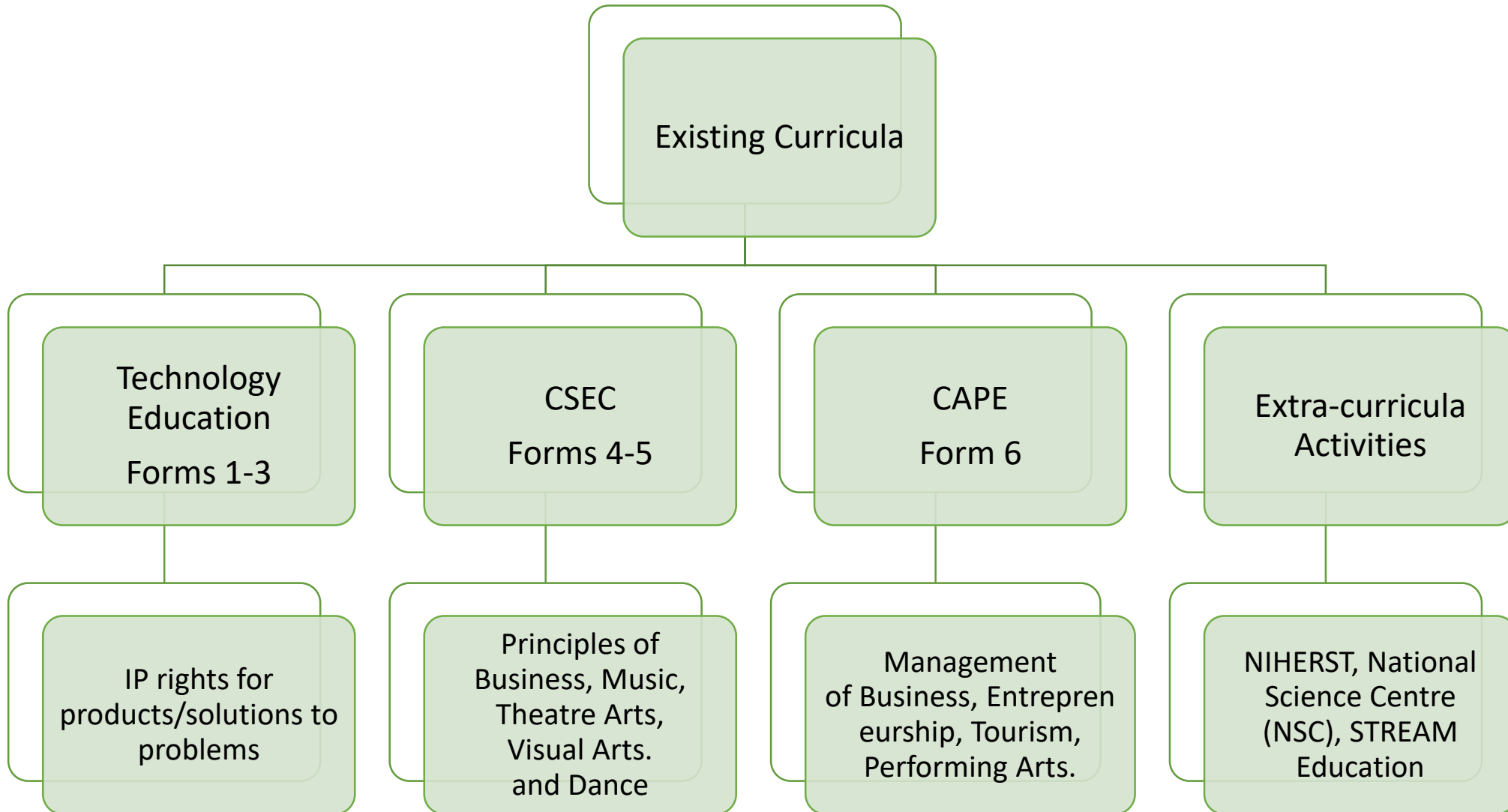
Through immersion in undergraduate and postgraduate courses

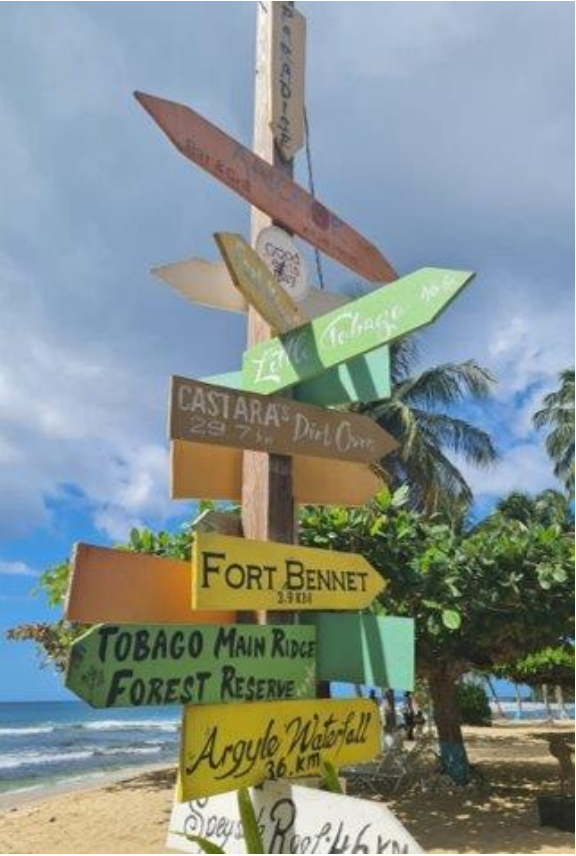
PowerPoint presentations (Visual aids) designed for specific age groups

Use of quizzes and interactive games to reinforce lessons

Use of PORORO workbooks (where applicable) for supplemental learning.

# Approaches of the MOE

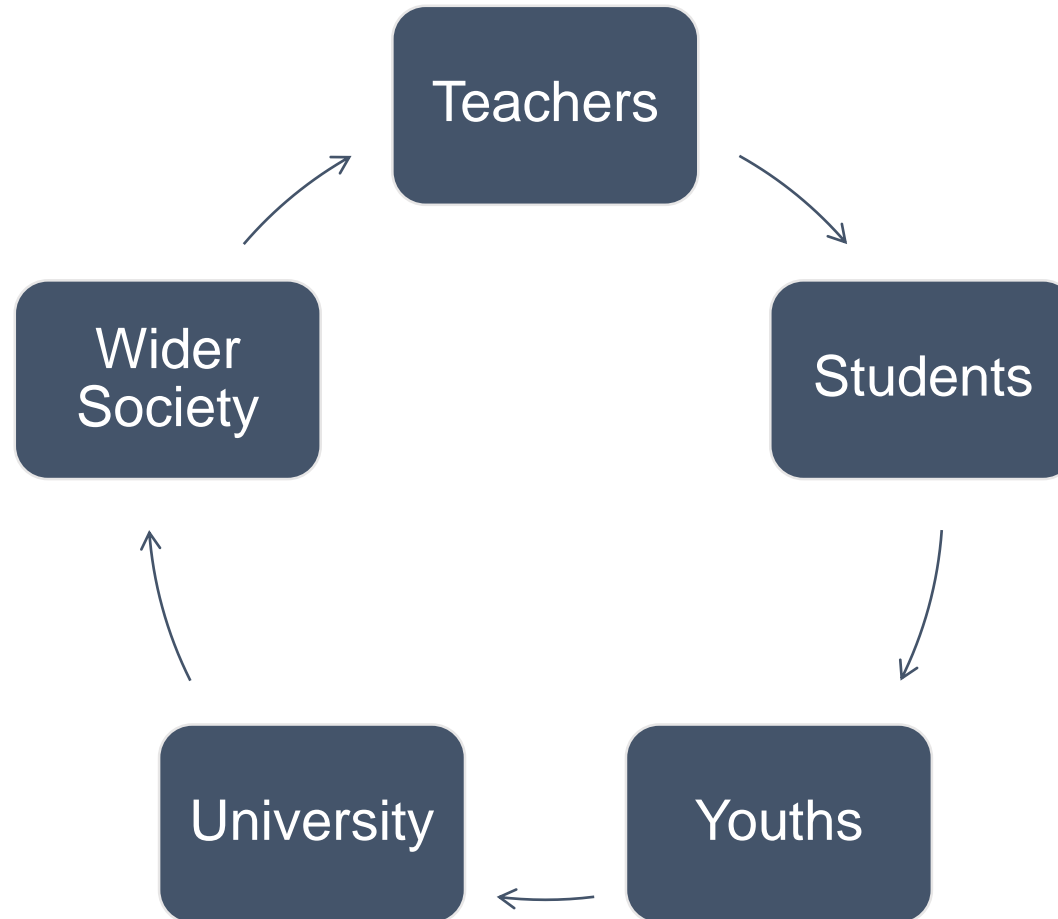




### Schools

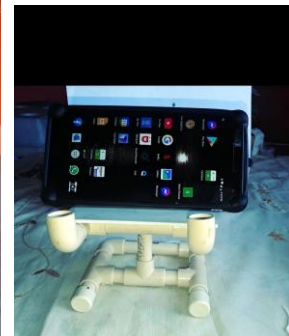
- ECCE Schools: [138]
- Primary Schools [474],
- Secondary [134], (Government Assisted and Government schools)

# Audience





# Developing Creativity through Technology Education Curriculum



# Teacher Training for Technology Education Implementation



**TESTING**

Chosen solution: Electman

Test the electrical operation of the device and functionality

Side View

Top View

ElectMan

A collage of images showing the "ElectMan" device. The top image is a side view of the device, which is a white frame containing a grid of yellow LEDs, resting on a black surface. The middle image is a top view of the device, showing the grid of yellow LEDs. The bottom image shows a person's feet stepping on the device, which is placed on a tiled floor. The text "TESTING" is at the top right, "Chosen solution: Electman" is on the left, and "Test the electrical operation of the device and functionality" is below it. The labels "Side View", "Top View", and "ElectMan" are positioned next to their respective images.



# Training of Technology Education Teachers on IP







DRAGON

Developing Creativity through  
the Visual and Performing Arts  
Curriculum



MARACAS





# POB CSEC Syllabus (8356/114642 students)

6. discuss the ethical implications of the use of ICT in business;

*Consequences of unethical use of ICT:*

- (a) *security;*
- (b) *privacy;*
- (c) *intellectual property infringement;*
- (d) *impact on humans; and,*
- (e) *distraction.*

10. outline the role of customer service;

*Ensuring conformity to customer requirements; adherence to copyrights, effective communication, coordinating flow of goods, services and information.*

12. explain the concept of intellectual property rights.

*Explain the concept and include subsets such as trademark, copyright, patent, industrial design.*

# CAPE Entrepreneurship syllabus (913/12402 students)

## **UNIT 1**

### **MODULE 3: CREATIVITY AND INNOVATION**

#### **GENERAL OBJECTIVES**

On completion of this Module, students should:

1. understand the nature of creativity and innovation;
2. appreciate the process of nurturing and managing innovation;
3. appreciate the value of creativity and innovation; and,
4. understand the importance of protecting creations and innovations.



# CAPE Entrepreneurship U1 P2 Examination Question 2021

## MODULE 3: CREATIVITY AND INNOVATION

### Case 5: Cooler to the rescue

Kureen is a Trinidadian who holds degrees in electrical and mechanical engineering. She can be described as creative, hardworking and a problem solver. She comes from a family of avid campers and she continuously aims to find ways to alleviate some of the inconveniences of camping. Consequently, using her expertise and creativity, she developed a multi-functional cooler. The cooler is outfitted with the capabilities to store cold drinks and heat water using a battery-operated system. The product is now sold on the local market and there are currently no competitors. She initially employed five workers; however, sales increased exponentially, leading to a present staff of twenty individuals. She hopes to continue using her creativity to create new products, which can alleviate a variety of problems encountered by citizens of her country.

5. (a) Identify the core innovation concept described in the case.

[1 mark]

- (b) Define the term 'creativity' as it relates to entrepreneurship.

### Case 6: Innovative

Dr. Louis is a cardiologist and bio-medical engineer. His main goal was to find ways to detect early signs of heart disease. He generated an idea to create a pocket size electrocardiogram (ECG) machine to check the heart rhythm and electrical activity of high risk individuals. The machine utilizes similar technology to that of finger scanners and features an email application which facilitates sending results to doctors. Dr. Louis enlisted the assistance of a colleague to evaluate the viability of the machine and the assistance of his wife, who is a business manager, to evaluate the business idea. An evaluation of the commercial feasibility was also conducted and the product was subsequently launched. One year later, a large medical equipment company released a similar product. Dr. Louis sought legal counsel in order to ascertain how he could stop the company from producing its product. However, since he had never obtained intellectual property rights for his product, he was left vulnerable. Within six months, Dr. Louis' company profits declined by twenty-five percent and two other companies launched similar products over a two-year period.

6. (a) Using supporting evidence from the case, outline TWO consequences that Dr. Louis endured because of the lack of intellectual property rights for his product.

[4 marks]

- (b) Using evidence from the case, outline TWO steps taken by Dr. Louis in his innovation process.

# Proposed Approaches

Curriculum Reform  
Proposal (An Integrated  
Approach) – Inclusion of IP  
in curricula

Inclusion within existing courses at  
Primary/Secondary/Tertiary level

Teacher Training/  
Teaching Strategies to reach  
the Youth

IP Competitions

National IP Training Centre  
(2022)







The [NIPTC Trinidad and Tobago](#) project concluded on December 10, 2021 and 31 trainers were certified after completing a series of interactive training and practical assignments, including the preparation of online IP training plans.

In 2022, the NIPTC in Trinidad and Tobago will start its operations at both the national and regional levels.

# Curriculum Reform Proposal-Snapshot

- INTEGRATING CREATIVITY AND INTELLECTUAL PROPERTY INTO THE NATIONAL CURRICULA OF PRIMARY AND SECONDARY SCHOOLS IN TRINIDAD AND TOBAGO

## Learning Outcomes

- To identify problems worth solving and opportunities with potential for innovation through use of analytical and design thinking tools.
- To apply basic creative thinking, innovation, and inventiveness for finding, developing, and presenting solutions by using different media, including digital technologies.

## In Classroom Activities

- Use of challenges with content from various subject areas.

## Out of Classroom Activities

- Still Exhibitions mounted by students at their school/library
- National Competitions
- Field trips
- Teacher Training activities

# Excerpt from Proposed Reformed Curricula

Challenge Name	Context	Challenge
Heroes and Heroines	In communities (local or national), there are individuals or groups of persons admired for their courage, outstanding achievement, or noble qualities.	<p>As a group design and create an advertising campaign to communicate to others the qualities of a Hero or Heroine from your Community or Country.</p> <p>Tips: students can create posters, models, drawings, poems, stories etc as part of their Campaign</p>
Wear me	One good idea can lead to development of a successful product. There can be creation of a product with new or different technologies.	As a group design and create a wearable item using locally available materials that can be used for a special occasion.





# Challenges – Trinidad and Tobago

## Anticipated

- Need for culture shift for appreciation of IP rights
- Approval from the Ministry of Education
- Lack of knowledge of IP rights by teachers and students
- Timetabling of IP Education activities within school hours
- Professional development opportunities in IP Education for teachers
- Provision of IP Education resources for teachers

## Unforeseen

- Challenges in the implementation of a National IPO Policy specifically at the school level.
- Challenges in relation to capacity, capability, content of implementers
- Timelines for curriculum reform and the potential for IP Education in selected schools
- Budget allocation for IP Education Programme implementation





# Successes

## Primary

- Pororo, KIPO videos

## Secondary

- Tech Ed solutions and IP training
- Curriculum integration and assessment
- Implementation of national curriculum where students' creativity is nurtured and developed (VAPA and Tech Ed.)

## Tertiary

- Successful IP training and examinations

## National

- IP Library for Materials, Research, Teacher Guidelines
- Curriculum Officers completed IPCC training.
- Launch of the NIPTC





Thank You