聯興國民小學
Lian-Sing Elementary School

STEM 課程在聯興國小初探

楊巽斐 校長

STEM課程

1. 程式設計
2. 機器人課程
3. 3D列印
4. 多軸飛行器:空拍機

相關資源

- 台中創客基地
- 教育局處
- 行動學習輔導團隊
- 教育噗浪客
- 家長

1.程式設計訓練學生邏輯思考能力

- 重新規劃電腦課
  五年級 加入 Scratch 課程
- 教育處 舉辦 師生 Scratch 設計比賽
  師生增能
- 利用資訊課 讓學生接觸程式設計網頁
  3-6年級學生均在課堂上進入一小時程式練習全校均獲得證書
- 找出前25名學生參加飆達客程式比賽
  讓獲獎學生有成就感

希望能發掘學生潛能
找出學生的亮點發揮

2.機器人課程

- 平民化機器人、Mbot 機器人、 Arduino
- 樂高機器人 : EV3 +五十川芳仁

✓ 課程融入方式: 冬夏令營　　社團

電腦課融入

展望:彈性課程

發展與實施1-6年級的校本課程

鼓勵學生參加機器人比賽 提升經驗與視野

經費與資源:教育處+Google社群資助方

困境:師資

3. 3D列印

- 台中創客基地 3D列印筆
- 教育處補助十幾間學校老師組裝3D列印機器
  參加創客嘉年華展
- 3D人像掃描建模
  3D建模
- 展望:融入電腦課程 3D建模設計 學生自己列印出自己
  設計的成品，並作為學校的特色代表。

4.多軸飛行器--空拍機

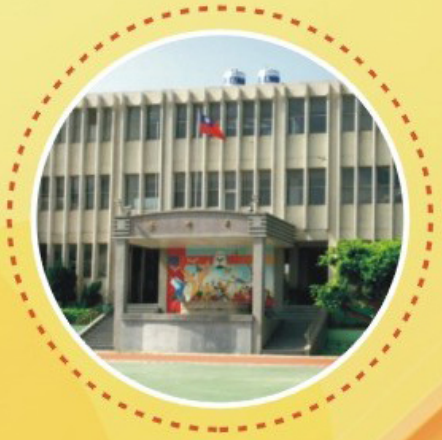
- 台中創客基地 四軸飛行器組裝與APP設計
- 家長是多軸飛行器高手
- 融入方式:聖誕節空降撒糖果
  並進行空拍機應用教學與介紹

✓ 展望:彈性課程
  家長會購置數台小型飛行器
  指導小朋友練行飛行器

在學校建構STEM常態課程?

- 電腦課資訊課程
- 結合美術課程 空間設計
- Maker 實物創做
- PBL導向課程
- 問題解決導向課程
- 與生活相關，如PM2.5 物聯網
  - 經費?
  - 師資?師培?






感謝聆聽

Welcome to

Lian-Sing

Elementary School

聯興國民小學

Lian-Sing Elementary School

The Exploration of STEM Program in Lian-Sing Elementary School

School Principle Syngfei Yang

STEM

1. Programming
2. Robotics Program
3. 3D Printing
4. Multi-axis Aircraft : Drone

Supports

- TCN Maker Centre
- Education Bureau
- Mobile Learning Counseling Group
- Taiwan Plurkers on Education & Technology
- Parents

1.Programming

is to train the students' logical thinking

- Computer Course Refreshing :
  Add Scratch Curriculum to the Fifth Grade Courses
- Department of education from the government held the Scratch Design Competition for Teachers & Students in order to enhance their related capability.
- Information curriculum enable students learn to design web-pages :
  All students from 3 to 6 grade engaged in coding practice for one hour in the class and each of them all got the certificate.
- Support the best 25 students to join Coding Game Based Learning to increase their confidence.

To Discover Students' Potential
& Encourage Their Merits

2.Robotics Program

- One Robot Per Kid、mbot 、 Arduino
- LEGO Robot : EV3 +Yoshihito Isogawa
- Ways to integrate with programs : Winter Camp & Summer Camp
  Student Clubs

Prospects : elastic curriculum to development and carry o
the school-based curriculum from 1 to 6 grade
and encourage the students take part in the
robots matches in order to broaden their scop
and increase their experiences.

Funds & Sources : Government department of education
+ Google Community Support Scheme

Dilemma : Qualified Teachers

3. 3D Printing

- TNC Maker Centre : 3D Print Pen
- The teachers who are from many schools got the subsidies from government in order to build 3D printer to participate in Maker Fair
- 3D Sense Scan Modeling
  3D Modeling
- Prospects : This technology could be integrated into the computer curriculum of 3D modeling design to help the students print out their own designs and to be the special features.

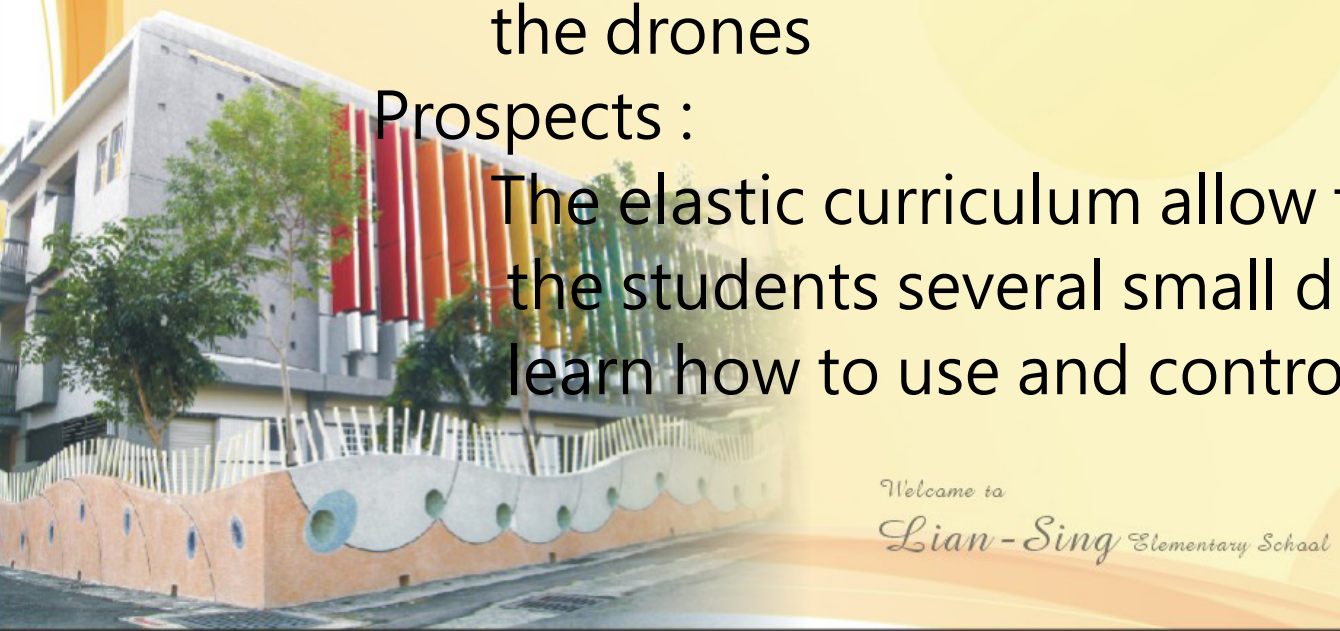
4.Multi-axis Aircraft : Drone

- TCN Maker Centre for Quadrotor-Building & APP-Designing
- Many parents are master in multi-axis aircraft
- Ways to Integrate :

  dropping the sweets from sky for Christmas and teaching & introduction of applying of the drones

Prospects :

The elastic curriculum allow the parents give the students several small drones to teach them learn how to use and control it.



How to Build STEM Normalized Curriculum in School?

- Computer & Information Curriculum
- Space Design with Art Curriculum
- Maker Practical Operation Course
- PBL Curriculum
- Problem Solving Based Oriented Curriculum
- Topics relevant to life, such as PM2.5 and IoT
- Budget ?
- Qualified Teacher?
- Teacher Training?




Thank You For Your Attenetion

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