Seed Project 2019 - 2020

Coding to Learn (C2L)
Enabling Primary Students to Experience a New Approach to English Learning

Project Code:
NT0319

Lionell HORN, Fiona PERRY, Linda HO and Maria CHAU
NET Section, CDI, EDB
16 February 2019
Key Question
How is coding related to literacy instruction?
The Seed project, *Coding to Learn – Enabling Primary Students to Experience a New Approach to English Learning (C2L)*, aims to explore ways to use coding as a means of motivating and supporting primary students to learn English as a second language.

**Description of C2L**

- **Objective 1**
  To design integrated learning activities which provide opportunities for students to develop and apply a range of language skills (6 language skills).

- **Objective 2**
  To create opportunities for students to be creators with use of technology not only consumers, through the learning and teaching of coding as a new literacy skill (GS and TE).

- **Objective 3**
  To facilitate the development of students’ 21st century skills (6Cs).

- **Objective 4**
  To promote effective assessment for learning strategies among teachers (SOLO).

- **Objective 5**
  To evaluate the impact of coding as a language acquisition activity on the learning, teaching and assessment of English as a second language.
Components of a C2L School-based English Language Curriculum

General Studies

English Language Education

Technology Education
What is Computational Thinking?

- Simulation
- Abstraction
- Algorithms and Procedures
- Problem Decomposition
- Data Collection
- Automation
- Data Representation
- Parallelisation
- Data Analysis
Visual Programming Language (VPL)

ScratchJr
VPL

End Product
Animation
Written Story

LEGO WeDo
VPL & Robotics

End Product
Robot Model
Written Report
School Sharing

HKUGA
Primary School

Involved in C2L
2017/18 & 2018/19

Christina SUEN
Joyce WONG
Yolanda OKORO
Seed Project Briefing
Coding to Learn (C2L)
16th February, 2019

HKUGA Primary School
Joyce Wong, Yolanda Okoro and Christina Suen
1. Welcome and Introduction

2. Why did we join the Seed Project?

3. What does the project look like in our school?

4. Benefits and Challenges

5. Q&A
Introduction – About HKUGA Primary School

- Direct Subsidy Scheme (DSS) Primary School in Chai Wan
- Primarily middle class students with strong family support
- Strong linguistics skills in speaking and listening
- Promotion of reading is our key focus
Why did we join the C2L Project?

- Development of **logical thinking** through Coding
- Provision of an authentic avenue for **integrating** with other subjects
- Application of **Character Strengths** such as Curiosity, Teamwork and Love of Learning (**as part of Positive Education**)
- Enhancement of **writing skills** in organisation, cohesion, editing and proofreading in a focused and systematic manner
What does the project look like in our school?

Past: 2017-18: P.3 started

- 2 units (narrative and information texts)
  - Narrative: Writing a story
  - Information: Making a Life Cycle

- Coding via ScratchJr and LEGO WeDo

Present: 2018-19: P.1 – P.4
What happened in 2017-18?

- Support from the NET Section (*PDs, planning, sharing resources, Cluster Meeting*)
- **Co-planning** with the team of P.3 teachers
- **Re-writing** the units to include ScratchJr and LEGO WeDo
- **Trialing** and **supporting** each other during lessons (Teaching Assistants and other P.3 teachers)
- **Evaluation** of achievement of objectives
- **Revision** of trialed materials and resources
- **Moving forward** (sharing with other YLs)
Teaching students to code using unplugged activities

Planning on paper with the help of Scratch Jr

Creating animation

Debugging

Drafting

Proofreading → Revising and Editing [CARS and CUPS]
1. Unplugged Coding
2. Plan

**Planning (1)**

Sit with your partner. Read each other’s experience on W54.2b. Choose one story and do planning for the story writing.

<table>
<thead>
<tr>
<th>Scene 1 - The Beginning (Setting and Characters)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Where? (e.g., mountain, school...)</td>
</tr>
<tr>
<td>When? (e.g., in the morning, one day...)</td>
</tr>
<tr>
<td>Who? (the main character: a boy or girl)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Scene 2 - The Problem (The trouble for your character)</th>
</tr>
</thead>
<tbody>
<tr>
<td>What kind of trouble did your character have when learning a new skill?</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Scene 3 - The Solution (The way to solve the problem)</th>
</tr>
</thead>
<tbody>
<tr>
<td>How did the character solve the problem?</td>
</tr>
<tr>
<td>What did he/she use to solve it?</td>
</tr>
<tr>
<td>Did he/she need help? By who?</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Scene 4 - The Ending (The new life)</th>
</tr>
</thead>
<tbody>
<tr>
<td>How does this new skill help the character?</td>
</tr>
<tr>
<td>How does she/he feel?</td>
</tr>
</tbody>
</table>

**Next step:**

Sketch the scenes on the grid (separated sheets).
3. Learn
4. Create
5. Draft then CARS and CUPS

**Drafting**

**Writing 2 – The Solution and the Ending**

Write the solution and the ending of your story in **two paragraphs** below. Write **30-50 words** for each paragraph. **Skip lines.**

- **After two months, Lily can do it**
- because she looked at many swimming difficulties
- **On that swimming lesson, her mom**
  - **She said, “Wow!”**
- **The coach said, “Yes, she had done**
  - a really great job at this three month.

**Editing 2 – The Solution and the Ending**

After writing the above, use **CARS** to check the content.

- **When that day on, her mom said**, “We can swim together now, and I’m proud.”
- “Thank you, mom. I really know how to swim now.”
- She replied happily and cheerfully and zoom her mom face

**Revising (CARS)**

After checking the content, use **CUPS** to check the grammar.

- **Correct mistakes**
6. Publish and Share

**Good Copy**
Copy your revised and edited story below. No need to skip lines.

One day, Lydia was playing with her toys in her room because she had nothing to do. Then her mum came in and asked, “One plus one equals...” Lydia replied, “Don’t ask me!” When her mum went out Lydia whispered, “I don’t know how to do maths! I’m scared!” One week later, Lydia went to school and in math class, Lydia thought, “My school’s math lesson is good.”

One recess, Lydia went to the library and whispered, “I need to practise maths so I can improve.” When recess was over, Lydia went back to class. When it was math class, her teacher said, “Today we have our FA! Lydia muttered, “I hope I have full marks.”

On Monday, the math teacher said, “I will give the FA now.” Lydia was scared when the teacher give the FA to Lydia, she was happy because she had full marks.

After the FA was over, she started to practise math at recess. Then her math FA had full marks. One day, Lydia’s mum shouted, “I’m so proud of you!” So that’s why Lydia liked math now.

Great effort. There is a clear problem and solution. You used many speech verbs and some high-level words. However, some parts of your story don’t make sense. How come Lydia got full marks and then she practised? She should have done poorly, practised and then got full marks.
Enhancing students’ speaking abilities through sharing

- Students present their story at the end of the Process Writing Stage.
- They feel more confident to speak with support from the process they have gone through.
- More structure, content and wider range of vocabulary.
Using LEGO WeDo with Information Text

- Teaching students the **life cycle** of a frog
- Teaching students how to **observe** the changes from a tadpole to an adult frog
- **Programming and debugging** of the model
- **Record** the changes
- **Drafting** the different life stages of a frog
- **Proofreading** → **Revising and Editing** [CARS and CUPS]
Reading, Observing & Jotting Notes
Programming (Motion & Sound) & Debugging
Drafting a Life Cycle

Date: 9th May, 2018

Write the different stages of a frog.

The Life Cycle of a Frog

Egg Stage
The female frog lays many eggs at a time. As the eggs grow, the yolk in each egg splits into more and more cells. It will grow into a tadpole. Within 1-3 weeks, the egg is ready to hatch.

Tadpole Stage
Tadpoles develop gills and legs. They breathe with gills in the water. Then they grow two hind legs with webbed feet.

Later Stage
Later, shorter front legs grow inside the tadpole's body until they fully grow. Tadpoles then breathe through the lungs when tadpoles come out of the water. Tadpoles will set onto shore. Now, the tadpole is become young frog.
Extending the Learning

- Group Project – Research and explore the life cycle of a different animal/insect’s life cycle
- Life Cycle Posters
Development of **logical thinking** through Coding **[ongoing]**

Provision of an authentic avenue for **integrating** with other subjects

Application of **Character Strengths** such as Curiosity, Teamwork and Love of Learning (**as part of Positive Education**)

Enhancement of **writing skills** in organisation, cohesion, editing and proofreading in a focused and systematic manner **[ongoing]**
“I am able to proofread my writing.”
<table>
<thead>
<tr>
<th>Plus ✓</th>
<th>Minus ✗</th>
<th>Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Writing with fun</td>
<td>Enough time to plan, write and revise their story</td>
<td>Need more time for debugging</td>
</tr>
<tr>
<td>• Provide ss a structure</td>
<td>• CARS and CUPS posters helpful</td>
<td>• Need more time for the unit</td>
</tr>
<tr>
<td>• Picture with the visual cues more to write, especially the weaker ones</td>
<td>• Normal word limit not enough</td>
<td></td>
</tr>
<tr>
<td>• Write in paragraphs – better organisation</td>
<td>• Widened reading scope</td>
<td></td>
</tr>
<tr>
<td>• Used more dialogue in their writing</td>
<td>• Research skills</td>
<td></td>
</tr>
<tr>
<td>• Kids are working more collaboratively</td>
<td>• In depth discussions</td>
<td>• Ideas got lost due to limitations in the App</td>
</tr>
<tr>
<td>• Students were speaking about the character and its movement</td>
<td>• Enhanced interactions with teacher</td>
<td></td>
</tr>
<tr>
<td>• Enhanced interactions with teacher</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Need development to get to more complex coding blocks</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Thank you!
Key Question

How is coding related to literacy instruction?
School Commitment

General

Plan
Allocate regular co-planning time for the project

Evaluate
Support the collection of data on the students and teachers

Trial
Begin the tryout of the project

Share
Share with other schools their Seed project experience

C2L is a three-year Seed project (started in the 2017/18 s.y.)
School Commitment
Project Teachers
Options for C2L Seed Project Schools

Two levels of participation

Level 1
- attend professional development
- implement the project
- share resources with other project schools
- identify and share good practice
- contribute towards the project evaluation

Level 2
- membership of learning community and network
Guiding Research Questions

Question 1: Coding & ESL
To what extent has coding helped second language students develop their language skills?

Question 2: Consumers vs Creators
With the use of technology, how have students become creators, rather than merely consumers, of information?

Question 3: 21st Century Skills
How has the teaching and learning of coding supported the development of students’ 21st century skills?

Question 4: Assessment for/as
What changes were seen in the school-based assessment to include assessment for and as learning strategies?
# Initial Evaluation Results

**Coding**

<table>
<thead>
<tr>
<th>Sections</th>
<th>Questions</th>
<th>School A</th>
<th>School B</th>
<th>School C</th>
<th>School D</th>
<th>Overall</th>
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</thead>
<tbody>
<tr>
<td>1</td>
<td>1.1</td>
<td>-4</td>
<td>24</td>
<td>+2</td>
<td>-1</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>1.2</td>
<td>-1</td>
<td>12</td>
<td>+17</td>
<td>-1</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>1.3</td>
<td>-6</td>
<td>12</td>
<td>+12</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td><strong>2.1</strong></td>
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<td>-4</td>
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<td>0</td>
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<tr>
<td></td>
<td><strong>2.2</strong></td>
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<td>+1</td>
</tr>
<tr>
<td></td>
<td><strong>3.2</strong></td>
<td>15</td>
<td>+10</td>
<td>0</td>
<td>4</td>
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</tr>
<tr>
<td></td>
<td><strong>3.3</strong></td>
<td>17</td>
<td>12</td>
<td>0</td>
<td>4</td>
<td>0</td>
</tr>
</tbody>
</table>

Key:  - decrease = equal = increase
Initial Evaluation Results

Content

![Graph showing content evaluation results for School A, School B, School C, and average for 3 schools. The graph compares content out of 10 marks pre and post evaluation.]
Initial Evaluation Results
Language and Style

![Graph showing language and style results for School A, B, C, and average for 3 schools. The graph includes two lines: one for Lang style out of 6 marks-PRE and one for Lang style out of 6 marks-POST.](image)
Initial Evaluation Results
Organisation

![Graph showing organisation scores for School A, School B, School C, and average for 3 schools before and after intervention.](image)
Initial Evaluation Results

Writing Total

[Graph showing comparison of Total scores for School A, School B, School C, and Average for 3 schools. The graph includes two lines: one for Total out of 20 marks-PRE and one for Total out of 20 marks-POST.]
Initial Evaluation Results
Writing Number of Words

![Graph showing Total Words for School A, School B, School C, and Average for 3 schools. The graph compares Total words - PRE and Total words - POST.]

- School A: Average
- School B: Average
- School C: Average
- Average for 3 schools
Initial Evaluation Results
Writing Corrections

![Graph showing corrections comparison between schools and pre/post]

- School A: Average
- School B: Average
- School C: Average
- Average for 3 schools

Corrections - PRE
Corrections - POST
Timeline for Application

March to April 2019
Contact Schools

16 February 2019
Briefing

5 March 2019
Deadline for Application

6 March 2019
Notification to Schools

5 July 2019
Preparation for C2L
Project Proposal

Education Bureau Circular Memorandum No. 5/2019

**Project Title:**
Coding to Learn – Enabling Primary Students to Experience a New Approach to English Learning (C2L)

**Project Code:** NT0319

**Name of CDI Section:** Native-speaking English Teacher Section

**Seed Project:** Appendix C

**Deadline for application:** 5 March 2019
Posting Your Proposal

Please send to the following address:

Human Resources Management Unit of EDB
4/F, East Wing
Central Government Offices
2 Tim Mei Avenue, Tamar, Hong Kong
(Application for Staff Interflow Schemes 2019)
NET Scheme e-Platform

Fostering Learning Communities Among International Educators

https://nets.edb.hkedcity.net/