Hopscotch (The Coding App);
to Enhance Creative Thinking Skills

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Introduction

After recently implementing iPads into the classroom, I noticed that the boys merely see them as a 'gaming console' and eagerly use the internet to search for their own things. I wanted to see them engage with the iPad on a deeper level, and for educative purposes. As James indicates, "most boys learn well through hands-on activities. If boys are able to manipulate the materials, they are much more likely to acquire knowledge" (James, 2007, p.43). Some key objectives and driving reasons for undertaking the research were to determine whether Hopscotch is a good introduction to coding, what creative thinking skills are used, how coding fits in with the Australian National Curriculum, and can it be integrated across subjects.

The Research Question

How does using the Hopscotch app, enhance Year 4 boys' creative thinking skills?

Research Context

Christ Church Grammar School (CCGS) is a Pre-Primary to Year 12 Anglican School for boys, located in Claremont, a high socio-economic suburb of Perth, Western Australia. Pre-Primary, Years 1, 2 and 3 all are double streamed with 50 boys in each cohort. Five years ago, the school decided to turn Year 4 from a double stream of 50 boys to a quadruple stream of 100 boys, i.e. in-taking an extra 50 new boys at Year 4 level. The community positively received this and there is always a waiting list of boys wanting to enter at this level.

Participants

The participants chosen for the project were the 24 boys from my Year 4 class.

"Oh my god! Look what I've created!"

The Research Action

The task given was to make a picture book story to show our Year 1 buddy class, using the HOPSCOTCH app. The introductory lessons included basic skills required to make a storybook in Hopscotch. Such skills included giving rules to the characters (Abilities, movement, drawing, appearance, values and control flow), inserting text and adding backgrounds. The boys were also given an opportunity to explore, play, discover and share what they'd made.

Data Collection

- Pre & post survey
- Lesson reflections
- Photos & videos
- Anecdotal notes

Data Analysis

The data was analysed by comparing the surveys, reviewing the data, anecdotal notes, videos and work. The concluding questionnaire identified several main themes: the educative benefits of using Hopscotch, the ability to be creative with Hopscotch and the level of enjoyment through Hopscotch. It was noteworthy to see that majority of the boys enjoyed using Hopscotch and had or intended to download the app at home.

## Key Findings and Discussion

- The boys thoroughly enjoyed the free play and were immediately interested in coding.
- They liked "everything" about the introductory lessons and had "fun controlling the mini creatures."
- They flourished when they were challenged and being shown the capabilities of Hopscotch. This was essential for the interactivity, creativity and open-endedness of their picture book.
- The boys assisted each other and relished the opportunity to add complex and exciting features to the book.
- A lot of the rich learning experiences came from when they discovered and shared.
- As a template wasn't given, they had to be entirely creative by themselves, allowed a wide variance in the final products.
- Hopscotch is a suitable app to learn and teach basic coding to Year 4 students.
- The boys were exposed to the limitless opportunities to be creative with Hopscotch and felt they could "think outside the box.
- One student referred to the storybook "lesson as the most fun yet. I loved utilising my skills in a movie."

What do you see are the benefits of using Hopscotch?

"You get to explore and create new things."

"That people can learn how to do basic programming."

"It is very easy to use and does not include lots of hard coding."

"Learning a life skill."

"Everything, because it's like a game."

Conclusions

There was a breadth of complexities with the storybooks. Some of the more complex stories had complicated coding events like timers and characters colliding. One student took the story book even further than I envisaged and was given the freedom to 'think outside the box,' which involved reaching into the unknown and being innovative.

Many boys stated that Hopscotch was a "basic" coding program that was easy for "kids to use." As computer science has influenced nearly every aspect of life over the past half-century (Martinez and Stager, 2013), it is not surprising that one boy identified a benefit of Hopscotch as "learning a life skill." Overall, the boys felt they had been "creative" and "had fun whilst learning." The project fostered mathematical discussions, perseverance, problem solving, brainstorming, planning, sharing, collaborating, story writing, publishing, editing, fun, engagement and most importantly creativity.
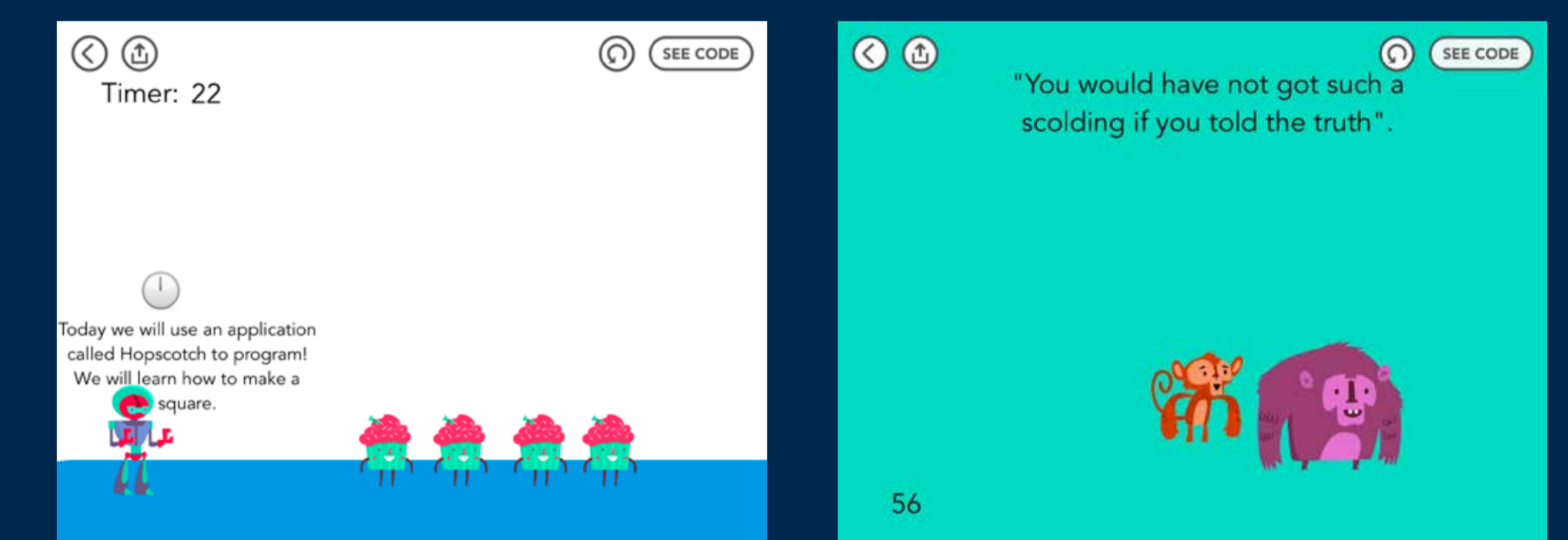
Key Readings

ABC,. (2014). *Coding crisis: getting tech skills taught in schools.* Retrieved from http://www.abc.net.au/technology/articles/2013/10/08/3864305.htm

Coding for Kids. (2014). *PBAS R-12 Curriculum and Pedagogy.* Retrieved from http://australiancurriculumtfel.edublogs.org/tag/hopscotch/

Fryer, W. (2014). *Hopscotch Challenges: Learn to Code on an iPad!* (1st ed.). Retrieved from https://www.smashwords.com/books/view/379158

Hopscotch,. (2014). *Hopscotch - Coding for kids.* Retrieved 8 September 2014, from http://www.gethopscotch.com/

See blog for Action Reserach Readings.

Further Information

This poster and further information is available at http://www.theibsc.org/.
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Researcher's Blog: http://sarahst0ne.edublogs.org/