Infuse and Saturate: Implementing the Digital Technologies curriculum at Taroona Primary School – a case study

Hilary Purdie & Danielle Bresnehan
TODAY

- Setting the scene
- Catalysts
- Summary of project
- INFLUENCES
- STRATEGIC ACTIONS – the isthmus
- Where to next
- Questions
Taroona Primary School

- 390 students K-6
- 27 teaching staff
- Established suburb
- Adjacent to Taroona High School
- 2013 1:1 ipad program
- Project Champion – Danielle Bresnehan
- Project Leader – Hilary Purdie
Organizational culture eats strategy for breakfast, lunch and dinner
CATALYSTS

- Digital Technologies curriculum
- Extended Learning
- A provocation - pockets of innovation to a culture of innovation
- Digital Literacies Schools Grant

“enhancing digital literacy through a whole of school approach”

DLSG
• embed the *Australian Curriculum: Digital Technologies* through a whole of school approach

• best practice models of implementation and student and teacher engagement

• sharing of ideas and experiences within and between schools

• ways that leaders can inspire their teachers and students to extend their ICT learning across other learning areas.
<table>
<thead>
<tr>
<th>Date</th>
<th>Event Description</th>
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<tbody>
<tr>
<td>November 2016</td>
<td>Grant announced</td>
</tr>
<tr>
<td>Term 2 2017</td>
<td>Concept framed</td>
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<tr>
<td>Term 3 2017</td>
<td>Call for coaches</td>
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<tr>
<td>Term 4 2017</td>
<td>CSER MOOC introduction</td>
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<td>Nov 2017</td>
<td>4 x PL days for coaches</td>
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<tr>
<td>Dec 2017</td>
<td>Amplify STEM &amp; community connections</td>
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<tr>
<td>Term 1 2018</td>
<td>Development of release model</td>
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<tr>
<td>Term 2 2018</td>
<td>Co-planning and co-teaching implemented</td>
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<td></td>
<td>Materials purchased</td>
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<td>Term 3 2018</td>
<td>Gradual release to grade teams</td>
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KEY INFLUENCES

- Everett Rogers – Diffusion of Innovation
- John Kotter – 8 Steps to Successful Change
- George Couros – The Innovator’s Mindset
- Stanford University K12 Design School – School Retool
Everett Rogers – Diffusion of Innovation

Understanding Change in an Organization

- Pragmatic: Wants anecdotal evidence
- Waits to hear good anecdotes
- Willing to take risk on change
- Conservative: Wants to see; Hold on
- Skeptic: No Way
- Change Initiator
- Early Adopters
- Early Majority
- Late Majority
- Laggards

Eight Steps To Successful Change
- John Kotter

1. Establish a sense of urgency
2. Create a guiding coalition
3. Develop a clear shared vision
4. Communicate the vision
5. Empower people to act on the vision
6. Create short term wins
7. Consolidate & build on the gains
8. Institutionalise the change

www.kotterinc.com/8-steps-process-for-leading-change
“from pockets of innovation to a culture of innovation”

4 questions for school leaders

1. Are your professional learning opportunities mirroring what you want to see in the classroom? Model what you seek.

2. Are your policies and procedures inhibiting innovative practices? Remove barriers

3. Is there transparency in your practice and learning? Don’t ask people to try new things if they do not see you doing the same thing.

4. Is collaboration an ongoing norm or do individuals and teams work in silos? Competitive-collaboration is crucial in education - we need to both push and support

https://georgecouros.ca/blog/archives/tag/pockets-of-innovation
Stanford d.School – School Retool

**THE HACK MINDSET**

What we mean when we talk about hacking.

- **Bias to Action**: Don’t over think it, just try it.
- **Fail Forward and Learn**: Use "failures" as opportunities to learn.
- **Start Small**: Keep the goal small, the team tight and the timeline short.

STRATEGIC ACTIONS

- Establish a sense of urgency
- CREATE A GUIDING COALITION
- DEVELOP A SHARED VISION
- Communicate the vision
- Empower people to act on the vision
- Create short term wins
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Establish a sense of urgency

Launch of the Project

- Introductory PL & celebration
- Makey Makey / Little Bits / Beebots & Lego Mindstorms
Creating a Context

- Adelaide University support officer session with all staff
- Connections to other schools, state, Australia wide
- Clarifying curriculum (relationship to STEM, Design etc)
GATHERING DATA

2. Please consider how often you did the following actions in your last two terms of teaching:

- I worked with the Digital Technologies curriculum in mind.
- My curriculum used digital technologies to solve authentic problems.
- I used "unplugged" computer coding activities to explore digital concepts.
- My students encountered...

Please rate your confidence in the following:

- My knowledge of the...
- My understanding of...
- My understanding of...
- My ability to teach...
- My skills in doing...
- Creating learning...
- Creating learning...
- Creating learning...

SurveyMonkey

Eight Steps To Successful Change
- John Kotter

1. Institutionalise the change
2. Consolidate & build on the gains
3. Create short term wins
4. Empower people to act on the vision
5. Communicate the vision
6. Develop a clear shared vision
7. Create a guiding coalition
8. Establish a sense of urgency
Create a guiding coalition

1. Empower coaches
2. Build a growth mindset culture
3. Community connections
4. Distribute responsibilities

“Our job, sometimes, is simply to be the spark, help build confidence, and then get out of the way. If innovation in any school is solely dependent upon one person, it will continue to happen in pockets. In contrast, when we focus on empowering learners to become leaders, they help spread ideas.” – George Couros in The Innovator’s Mindset
Coaches empowered in all parts of the process
- Establishing group norms
- Decision making
- Determining direction of their own PL
- Problem solving
- Planning learning for coaches
- Planning & running PL for all teachers
- Engage in MOOC
UNPLUGGED – planned and led by coaches for coaches
UNPLUGGED – planned and led by coaches for coaches
BUILD A GROWTH MINDSET CULTURE

- Profile of a modern teacher
- Have a go (eg Flipgrid)
- Quotes
- Technologies to watch for graphic
- Scope and sequence...What?!!
- Personal and team strengths and weaknesses
- Commitment to weekly reflections on own learning
STRATEGIC and COMMUNITY CONNECTIONS
IDENTIFYING STAKEHOLDERS

Who are our stakeholders?

- Students, parents & staff
- Taroona community, local digital community, other schools & institutions, DoE digital unit
- Australian Government
- Online community (MOOC & education community)
• What is our accountability?
• Our measures of success. How will we track our progress in this area?
• How will we celebrate and share?
DISTRIBUTED RESPONSIBILITIES

Networking Team
- Peter Lelong – Tas CSER project officer
- Amplify STEM schools
- UTAS Peter Underwood Centre
- Taroona High School
- Department of Education
- Blended learning unit

Resources Team
- Planned unit plan recorder
- Researched STEM materials to purchase
- Planned procedures for managing STEM materials

Communications Team
- In classrooms
- In school
- In TPS school community
- Wider community
- Online
Develop a shared vision

STRATEGIES AND PROCESSES

- Processes to develop aspiration & defined behaviours
- Processes to arrive at agreed directions / continuums for school
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Grappling with ambiguous problems

The problems are complex and ambiguous. The solutions are uncertain and unclear. 

School processes were invaluable here – getting unstuck (gaining a fresh perspective and re-framing a challenge) Use the 8 core-abilities in design thinking to address our challenges.

1. What is our aspiration and our defined behaviours?
2. How do we align our current work with the DT curriculum?
What is our aspiration and our defined behaviours?

Used d schools principles of moving between the concrete and the abstract.

**Abstract** is the Why...Why are we doing this work? By using abstraction we were able to distil the core of our work in DT at Taroona Primary School. This helped define meaning, goals and principles and helped shape our aspiration.

Then the How (which is the defined behaviours) is moving to the **concrete**. How is this going to work? This helped define details and features of our defined behaviours.
What is our aspiration and defined behaviours?
How do we align our work with the DT curriculum?

- Timeframe
- WSA vs individualised
- Problem solving approach vs tinkering
- Teacher vs student led

It was at this point that all of our previous learning came together. New knowledge and skills, case studies from other schools, a good understanding of the needs of Taroona Primary’s particular learning and wider community. Which of the models would work for us? Address our needs? How would the 4 continuums intersect? Complement one another? Conflict one another?
ANALYSING CASE STUDIES & 4 CONTINUUMS

8 core abilities —

01 Navigate Ambiguity
02 Learn from Others (People and Contexts)
03 Synthesize Information
04 Experiment Rapidly
05 Move Between Concrete and Abstract
06 Build and Craft Intentionally
07 Communicate Deliberately
4 CONTINUUMS

Time – short term wins vs year long project
Whole School Approach – common curriculum area vs own class focus
Ownership – teacher led vs student driven
Pedagogy – problem solving / STEM vs tinkering
A STARTING POINT

**Time** – short term wins (start small & bias to action)

**Whole School Approach** – collaborative teams common theme

**Ownership** – teacher led to begin with – scaffolded inquiry

**Pedagogy** – tinker to scaffold skills (bias to action)
Communicate the vision

- Aspiration & defined behaviours
- Teacher PL led by digital coaches team (reflections from coaches shared)
- Newsletter item

STRATEGIES AND PROCESSES
- Use of metaphor
- Language
- Modelling learning

"I am inspired!"
"It's about creating rather than using"
"It's really accessible. I'm motivated to go and do something"
"I can see it as purposeful for my classroom"
"I'm surprised at how engaging the online learning is"
"It's a combination of the CREATIVITY with the COMPUTATIONAL THINKING – with the teacher being able to make the link"
"There's lots of links to My Ed connections / Genius Hour / Inquiry"
"I can see the ability to engage girls in problem solving through creativity"
Empower people to act on the vision

- Rolling release timetables
- Risk management plan
- Unit planner
BUDGET & RESOURCES

- PL and teacher release – 80%
- Remainder on resources
- School contribution 0.2 FTE staffing

- Purchased shared class sets of:
  - Beebots
  - Ozobots
  - EV3 Legomindstoms
  - Makey Makey
  - Spheros
Create short term wins

Start small – goals of first term implementation across the school:

1. establish language of DT
2. make connections to student lives, and across curriculum
Where to next?

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Organizational culture eats strategy for breakfast, lunch and dinner

Culture

Strategy

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Thank you to our Supporters.....