



Living in a small data world: Play in secondary school

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Bevan Holloway was a 2018 Dr Vince Ham CORE Education eFellow. During his eFellowship, Bevan focused on looking at the application of learning through play principles in a secondary context. He wanted to see the degree to which these principles can facilitate powerful learning, how a teacher's role changes, the impact on student dispositions and how learning through play changes the nature of NCEA assessment. This report is a summary of what he discovered.

Introduction

Mary [name changed] had spent the previous two years becoming an increasingly confused student of English, to the point where “I didn’t care. I didn’t try”. Despite being someone who had “always liked reading” and had a desire to do well (“I like improvement”), she couldn’t crack the code, and was “just like ‘Why?’”.

And there was nothing wrong with her learning experience in the two previous years. The teachers had done everything ‘right’. They made their plans known to the students and stuck to them; the learning intentions were clear; they provided lots of scaffolding and modelling; they gave feedback and identified next steps; they supported assessments with explicit achievement criteria, tasks and exemplars. In other words, her teachers had stuck to the systems the department had that sought to clarify and demystify the learning and assessment of English. Best practice guided daily practice.

But it hadn’t worked for Mary. She didn’t understand the point, and without that all the systems and practices were of no value. There was no clear relationship between those best practice inputs and her learning; no cause and effect, A to B, linear progression of teacher effort to student learning.

Of course, I did not know this when I set out on my exploration of learning through play. All I knew was I was disheartened and uneasy with what I was seeing in the experience of secondary school for the bulk of my students. It seemed that, no matter how hard I tried, no matter how clear I was, no matter how much I stuck to systems and best practice, for most students the learning was a passive experience, and for some it was disempowering.

And I knew I wasn’t alone. I saw echoes of this in posts on the English listserv and in ad hoc conversations with colleagues: students were ‘obsessed with credits’, didn’t seem to care, weren’t motivated, didn’t ‘get it’ no matter how hard ‘we’ tried, didn’t follow instructions, didn’t want to learn.

But, taking a cue from Richie McCaw's first biography (2012), and his observation that if someone in your team isn't performing according to expectations you owe it to them to look at yourself first, I wondered...if I changed the learning experience, would the students react differently? In other words, was what I was seeing more a reflection of me and what I had set up, than an insight into the students?

A play environment

I have written about my theoretical journey to discovering play, as well as the research methodology I used, in 'Play: a secondary concern?', which was published in *SET, Special Issue: Learning through play and games* (2018). This report will not repeat those aspects of the project. Instead, this report will focus on my experience as a teacher in a play environment, and through that question conventional ideas about best practice.

It is clear to me that all the best practice strategies made no impact on Mary. I would venture to say her experience is not an exclusive one. Instead, what I now believe is that we need to become much more attuned to the needs of our students. We need to know them better, in all dimensions. Only then will those thousands of intuitive decisions we make each day become decisions made in the interests of the students, not systems.

What I found in my research is that play, as a pedagogy, enables that attuned approach very effectively. Learning, when honestly pursued, is a complex endeavour, and we do our students a disservice when we design and hold steadfast to systems that make it appear simple; when we describe for them an $A > B$, input = output, linear equation. People are much more complex and dynamic than that.

My research

This research was conducted in a Year 11 English classroom at a decile 10 inner city girls' college. The college has high levels of NCEA achievement, and has adopted a progressive approach to education. Its charter emphasises the prominence of learning, the need for creativity, the wellbeing of students and staff, and the importance of community.





I used three data gathering methodologies in this research. To access the honest voice of students, I used the talanoa methodology, and when students are quoted in this report, that is the source. To chart my experience, I used a diary in which I recorded observations and thoughts during lessons. My voice comes from this source. To capture student learning, I explored the use of learning stories, and I derived evidence of achievement and progress from these.

One of the challenges I faced was conceptualising what play was in secondary school. I guessed, rightly, my students would not spend their time playing shops. Play looks different as people age. I also had to deal with the fact of it being bound within a curriculum area: English.

Play: what does the teacher do?

So much of the narrative that challenges play as a pedagogy consists of the notion that it's a hands off, children run free, chaotic state of learning. While freedom lies at the heart of play, in an education setting teachers have a duty to do more than that. They must provide structure, guidance, and expertise. In play, those essential components of learning are provided but positioned in different ways. I was aided immensely here by two things: firstly, the urges people exhibit in play and secondly, Piaget's stages of cognitive development.

Provide structure

The urges (**Figure 1**) were useful because they provide a frame to understand the thinking people are actually exploring when they play. When you look at the list, you can see echoes of Grey's (2013) argument that play is where people practise what is needed to be constructive members of their community. The 'trick' for me was to conceptualise them into English as a subject. Some were easier than others: connection (how do ideas/texts/sections link), families (relationships), transformation (what if...?), patterning and ordering (language and structure). All of those urges are common parts of the study of English. I think all curriculum areas could find a number of urges that are relevant to their area of expertise.

Some of the Urges that spontaneously Express through Babies' and Children's Play

Some of our human play urges are shared with other mammals because the structure of mammals' brains requires mammalian play to develop the neurological structures needed for survival. The less stable neocortical structure of humans (sometimes referred to as 'the great thinking brain') depends on two things to 'stabilise' in an individual - nurture and play. The genetically programmed play urges (schema) are Nature's way of seeing the neurological structures are developed for survival *and* transcendence.

The question for those of us who work with children is what do we have in their environment that will enable them to follow their genetically encoded promptings and play out their play urges? And is there enough of each thing? Two pinecones will not cut it, half a barrel of pinecones will. One wheelbarrow or trolley is a recipe for conflict, half a dozen means there will be 'Transport Companies' evolve at your place.

Gathering - What beautiful things are there at your place for the children to gather up? Are there lots and lots?

Transporting - What will they transport them in? Handbags, baskets, buckets, wheelbarrows?

Deconstruction - Breaking things comes before making things - for most children.

Construction - Is there enough to make something *decent*? *Two* sets of multiple unit blocks? Planks, pegs, reels, blankets, tarpaulins...

Huts (enclosure) - Shelter and safety is deep within the human experience, so what is there for the children to construct their own huts with (rather than be stuck with fixed 'play house' someone else has constructed)? Cardboard cartons are perfect for children from babies upward.

Throwing (trajectory) - What is there to throw, inside and outside. And what else is there to throw?

Enveloping - Wrapping things in more leaves and more paper with forty meters of sellotape...

Connection - Putting things end to end, tying things together to make a 'convoy' of wheelbarrows, trucks, friends... They'll need string, rope, ties to connect up their creations.

Posting - Putting things into things is an urge. You can buy specific expensive equipment for this urge or you can up-cycle and put things in the environment that just ask you to post.

Patterning and ordering - If you have plenty of beautiful containers full of beautiful natural objects to meet the gathering urge, you will also have the most ideal materials for patterning and ordering. All your sorting, classifying, seriating threads of learning will happen with these treasures from nature.

Families - Children make families, but that doesn't mean you have to have plastic animals or a class set of dolls. They make families with sticks, stones, shells...

Rotation - Starting with rolling when babies learn to move off their backs to spinning round and round and falling down dizzy, children have a pattern of the circular to unfold. Low, horizontal tyre-swings extend this, wheeled vehicles, a spinning wheel, retro wind-up gramophones...

Orientation - Looking at things from another angle. Where can children hang upside down, look through their legs, 'stand' on their head?

Transformation - Turning something into something else, watching the properties morph and change: soil and water mud pies, clay and water sculpting, flour, butter, baking powder, sugar, water and yeast morning tea rolls....

Climbing - Children are going to climb - some more than others - so where are they going to climb that offers them a decent challenge, both inside and outside?

Jumping - Children are going to jump, so where are they going to jump that is legal inside, and a challenge outside?

Digging and burying - We share this urge with a number of mammals. Have the children got proper spades and tools?

Tug of war - Like some other mammals, tug-of-war is an urge. What have you got for this urge?

Tumbling and wrestling - We share this urge with puppies, kittens and all our primate cousins.

Running and chasey - We share this urge with many of our fellow mammals, taking turns to chase and be chased.

Playing with water - This sacred element is irresistible for all children and most adults.

Playing with fire - This sacred element is irresistible for children and adults alike, where will they light fires legally?

Workshop notes: Pennie Brownlee

Figure 1: Some of the urges that spontaneously express through babies' and children's play.
Retrieved from: https://penniebrownlee.weebly.com/uploads/1/0/4/3/10437917/urges_list.pdf

Piaget (2002) helped when I thought about how the urges might exhibit themselves in 15 and 16 year olds. I realised, in terms of cognitive development, my students would likely have just entered the abstract stage after years of being in the concrete. As a parent I was familiar with the idea of regression, and so I realised the addition of concrete supports – things that were real and malleable – would smooth that transition, because they would allow for students to work from what was familiar: the concrete. And in terms of my actions in class, that helped me recognise how I could position my subject knowledge to guide their thinking.

Build relationships

Structure in play is evident through the rich environment and the provocations designed to shape the play in subject-relevant ways. What I found too was that the deep relationships I formed with students provided another form of structure. Those relationships were formed through the two main pillars of teaching through play: observing in a true sense – stepping back, listening, watching and thinking; and one-to-one engagements – the personal guidance that happens when my expertise was applied to their play. That could be questions: I wonder what..., have you thought of..., could you..., etc. It could be discussions, or asking them to explain, or challenging them in playful ways to make a link to something, for example: “See that LEGO wall, tell me what it shows you about the poem?” – this type of question prompts a shift from concrete to abstract thinking.

I often employed the spray and walk away technique, which meant my engagements with students were short and sharp. I found this effective in two ways. First, the discipline of the strategy allowed me to have time with a large number of students each lesson. Second, because of its modus of drop and run, it left students to grapple with what I'd offered and make sense of it in their own ways. Coupled with the highly observational approach, I found this gave me great insights into the students.

What happened?

Figure 2 is an entry from the diary I kept to help me be deliberate with my observing. This particular entry details a follow up engagement with Mary. In this entry, we can see her desire to become better. Her actions are precise and her learning is focused; it is the process she is interested in. It is clear she gets it, and is actively building from the guidance and expertise I had offered the day before. She cares. She is trying. She understands why.



"What are you up to *Popo* after
our convo yesterday?"

"I
just looking closely at my control
of past and present and thinking
about how I'm structuring
my sentences.
I don't think it needs to be loosened.
I'm happy with how it's shaping
up."

This student has developed
significantly as a writer. By being
given time & care, her belief she
can write with purpose & craft
& imagination has developed. At
first, she thought she could only do
formal writing.
- lower science + facts.

"I'm looking at all the sentences + words
to see if they're doing what I want
them to do"
"I could hand it in but I'm still learning."

Figure 2: Research diary entry

Better decisions

But why the change? What was it about play that had unlocked the door for her? My hunch is that the highly observational approach teachers must take in play meant I was able to make better decisions. Decisions that were focused on the needs of the students.

Mary observed that, “...we get good advice that’s personal to us”, which she felt was the opposite of what she got in other classes where, “they would never talk to you individually.” This was a universal sentiment from students.

And all students said that me knowing them in a fuller way them helped them learn:

“

I think you actually know us, and know a bit about what we’re like. (Student)

...you’ve seen us and how we work in the class environment and how we work with other people and, like, the work we can produce and you can help us based off that which is really nice, whereas most teachers won’t, they’ll just give you the answer to the question, they won’t, like, give you stuff to actually help you. (Student)

...when you come and talk to us sometimes we didn’t realise we needed help...
(Student)

”

All of these quotes speak to the importance of relationships in education. And we all know this to be true. However, I think they speak of the importance in a way that is not normally expressed: relationships are important because they help teachers see the students holistically, and thus are more attuned to their needs. Students said I actually knew them, that I understood them, that I was able to guide them in meaningful ways because I’d noticed something when observing. It’s also interesting a distinction was made between providing answers and ‘actually’ helping.

There is something in this. Best practice tells what we can do for students, and it’s predicated upon the assumption that learning, if the teaching is clear and provides explicit supports, is easy. Follow the recipe. Stick to the plan. Pay attention to the exemplars. Follow the rules. Complete the tasks. Adhere to the system and its expectations. Simple.

However, learning, and thus teaching, is highly complex. Numerous factors impact on that process in unpredictable and often hidden ways. And each day, in each lesson, teachers make intuitive decisions in that messy complexity. They base those decisions on their experience and expertise, on the plans that have been made, on assessment demands, on the culture and behavioural and achievement expectations of the school, on their values and beliefs about teaching and learning, and what they know about the students.

But what these students unanimously described were classroom environments where the scope for building knowledge about them as individuals was narrowed. Teachers “never spend one on one time with us”, they “just come in and say all the stuff they have to say ... and then sit down in the chair and say ‘work’”, they “treat you all the same”. Except, that is, when they were learning through play.

I don’t think we can blame the teachers. I was one whose practice was exactly as the students described. It’s a practice that is the result of a system that puts enormous emphasis on progress through units and assessments and in achievement. It’s a system that treats teaching and learning as a science and emphasises the utility of being educated and therefore its transactional nature.

As a result, there is little time, especially in secondary schools, for teachers to really get to know all their students because there are important things to get through by a certain time for which they are accountable. But what this means is teachers have a fuller, more broadly framed understanding of systems and assessments and plans and expectations than they do of their students.



How the mind works

This has been an unexpected point of reflection for me. Kahneman (2011) provides a nice frame for understanding this. He argues the mind works on two levels: System 1 and 2. System 1 is dominant, and is the realm of intuition: it seeks coherence, jumps to conclusions, reflects cultural norms and assumes that “what you see is all there is” (p. 85).

System 1 helps us navigate the day but does not deal in critical thinking. That is the role of System 2, which is associated with “uncertainty and doubt” (p. 80) and is therefore more associated with rational decision making. However, because that takes effort System 2 is lazy (pp. 39-49). Furthermore, Kahneman argues that for decisions to be effective and reliable there needs to be a broad framing of the data upon which they are based.

In the contexts described by the students above, the teachers’ frame of knowledge about them is narrow, and as a result other data has a bigger influence on the intuitive decisions teachers are making because it is more broadly framed. Just think of the amount of time that is devoted in meetings to processes, assessments, schemes and plans. The net result here is it is easy to fit ideas about students into a coherent, grand narrative of learning created by the context because they are a smaller piece of the story. Which means we say students are either able or not, motivated or not, obsessed by credits or not, a problem or not, or perhaps something in between. When we care about our students, we need to flip the data dominance towards people and away from systems.

Big data, small data

I feel we are in this position because of an obsession with what Pasi Sahlberg (2016) calls big data, which in education is assessment and other easily quantified and gathered information such as attendance, pastoral referrals, and extra curricular involvement. A lot of time in secondary school is spent trying to make sense of this kind of data.

But Sahlberg argues we need to focus instead on revaluing small data: “to improve teaching and learning, it behooves reformers to pay more attention to small data – to the diversity and beauty that exists in every classroom – and the causation they reveal in the present.” This mirrors Kahneman’s argument around broad framing: we get an incomplete, distorted picture of our context and the people in it when what mostly guides our intuitive decisions is big data, which is ‘objective’, impersonal and from the past.

Learning through play, to be effective, is reliant on the teacher living in a small data world, which is a world of people and relationships and emotions in the present. And because play affords learners freedom to explore in ways meaningful to them, diversity is the default setting which means teachers get to see a fuller picture of the students. For a teacher to add value, they must respond to this diversity and recognise the beauty inherent within it. They must be attuned to the people, and in doing so they gain a broad frame of people-focused 'data'.

This is easier said than done because it requires giving up some of the things seen as essential. For example, I gave up whole class direct instruction and discussions as a way to buy time to build that picture. I commented on this struggle to students, saying, "I've had to get used to understanding time, because there's always the urge to get through. So when things are drifting ... you're almost trained to step in and make them work faster." Without whole class 'stuff' I lost a lot of control over time and therefore my sense of progress. And I struggled with the idea of giving students the freedom to make their own choices, worrying, "Am I doing my job? What's going to happen if I don't tell them what to do?"

Noticing different things

What happened was I noticed different things. Instead of noticing who was and wasn't paying attention or keeping up with the work (which, when you consider it, are noticing things that fit nicely with system demands) I started to notice other things. Like what students were interested in, and their ability to collaborate, and how they manage themselves, and their stress levels, and their confidence, and their creativity, and who their friends are, and what makes them laugh, and how they relate to others, and their communication strengths.

In a way, the point is not that play leads to those things, it's that play makes them visible and noticeable and as a result a fuller picture of students is built. And the effect was that I developed strongly positive impressions of and relationships with the students. I knew I could trust them. The students knew it too: "...we know you trust us so we're more confident in our work...". It made them more open to asking for help: "If you have a trust you feel ok about asking things" because without it "you don't know what kind of answer they're [the teacher] going to give."

This all sounds wonderful, but for me it led to significant cognitive dissonance. The depth of knowledge I had about the students made it harder and harder to fit them into a coherent education story; System 1's assumption that "what you see is all there is" was fundamentally challenged. Far from seeing student learning in simple terms, the narrative became much more complex and I could no longer jump to conclusions.

Take Zoe [name changed], a student who wouldn't/couldn't write an essay and was a hesitant 'worker'. Turns out she wasn't unable, or unmotivated, or a problem, categories I'd used to classify similar students in the past. In those cases, I had gone to best practice or behavioural answers: better exemplars; more scaffolding; clearer breakdowns of criteria and rubrics; telling her to pay more attention to tasks and instructions; trying to get her to focus better; making sure she managed her time better so she met deadlines. These are all things we can control, things we can do to make sure the student gets where we need them to be. But I did none of those things and everything changed for Zoe.

Responding differently

Learning through play allowed Zoe to enjoy English for the first time. She got time with me, and through observation I noticed what she needed: care and the opportunity to be active, not passive, in her learning; she needed the pressure taken off and the chance to work at her own pace so she wasn't always stressed; she needed me to work with her when she was ready.

The actual cause of her issue was found in observing her in the present, in the small data, as Sahlberg says. Zoe found the pressure of school really hard and her coping mechanism was to “just zone out”, which created more stress, which shut her off further and made her feel she couldn't ‘do’ English. Removing the stress and allowing her to exercise agency meant her attitude changed completely “because it's the only class where you don't have to just sit and listen...it's not stressful.” Agency and lack of stress led to greater engagement: “...already this year I've written my first ever essay...I obviously asked you how...”.

Understanding the effect stress had on her made it hard for me to paint her as the student who ‘couldn't/wouldn't’, as someone who, if they wanted to change their results, just needed to do as instructed. I clearly saw that wasn't the case. Zoe wasn't the villain in this story anymore, she wasn't the one who was at fault for her lack of engagement and progress. There was no coherence in that story now. What did make sense was the realisation that the context for learning was making her stressed, shutting her down and making her feel she was incapable.

My best practice and behavioural answers might have eventually got some work out of her and created the illusion of progress, but would have made no difference to, and in fact would probably have amplified, the cause of her issue. In my opinion, hers was a clear illustration that often the behaviour we get from students is a reflection of the contexts in which they are placed. Richie McCaw was right after all. Zoe didn't change - she was always capable. But the learning context did and so her capabilities became evident, to both her and me. What now needed to change was the bigger context.

Student control

What all this meant was that as the year went on I started to make decisions that were more attuned to the needs of the students than the system. ‘Best practice’ didn't matter to me; what mattered was being as attuned to my students as possible because I came to realise that was where I would properly see how they could be free to learn and how I could most effectively tailor my expertise. Where small data about students clashed with other aspects of the system, the fuller picture I had of the students meant my decisions became more and more influenced by their needs.

Systems seek to make complex things simple and controllable. That is fine, but when the system is the dominant factor in our decision making, what we are really showing is that control is the most important thing. And then the system becomes the culture, to the detriment of the people within it. By having a narrow frame of understanding of our students we too easily discount the impact of those decisions on them, which is that they become disempowered and disengaged. Unfortunately I think that is the grim reality of the secondary school experience for most students. Play offers a way out.

Final thoughts

We are being told, on the back of the NCEA review, that teachers will have more time for learning. However, no one has been able to explain how that is so, and I am sceptical. In reality, what we are about to enter is another age of assessment dominance of the education narrative, where resources, publicity, professional learning and development, and time will be poured into both giving shape to NCEA 2.0 and developing teacher understanding about it. Kahneman's theory suggests the result of putting the assessment model first, and filling our minds with information about it, will mean the demands of assessment will dominate teacher decision making because it will be the most broadly framed data they draw from.

But:

Where is the learner in all this?

Where is the curriculum, even?

What happens to students when we try to squeeze them into an inflexible, assessment dominant model of education?

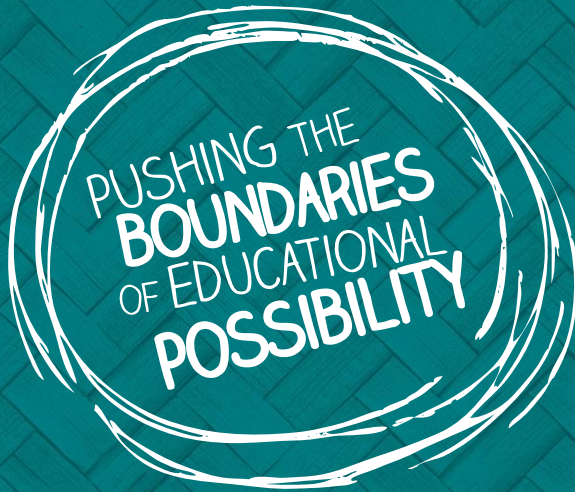
One thing I learnt through my exploration of play is there is a big difference between best assessment practice and best learning practice. I fear we conflate the two at secondary level. What play let me realise is that learning is highly complex and individual, so while best practice is good at describing simple processes and situations (such as an achievement standard) perhaps it is time to coin another phrase to describe, and differentiate, what is needed for teachers to embrace learning? I propose calling it attuned practice: the skill of being tuned in to the complex learning needs of our students and responding with expertise. Devoting resources to pedagogical approaches that enable this attuned approach, and then considering how an assessment model can reflect it is, in my opinion, the real way to make learning the focus.



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