The dance of agency: Student engagement in assessment for learning

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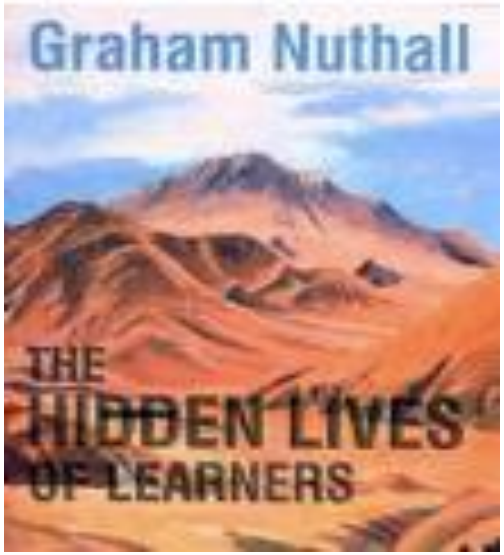
- Setting the scene
- Explaining the title
- Exploring the dance

Setting the scene

1. Setting the scene:
Acknowledging Graham Nuthall

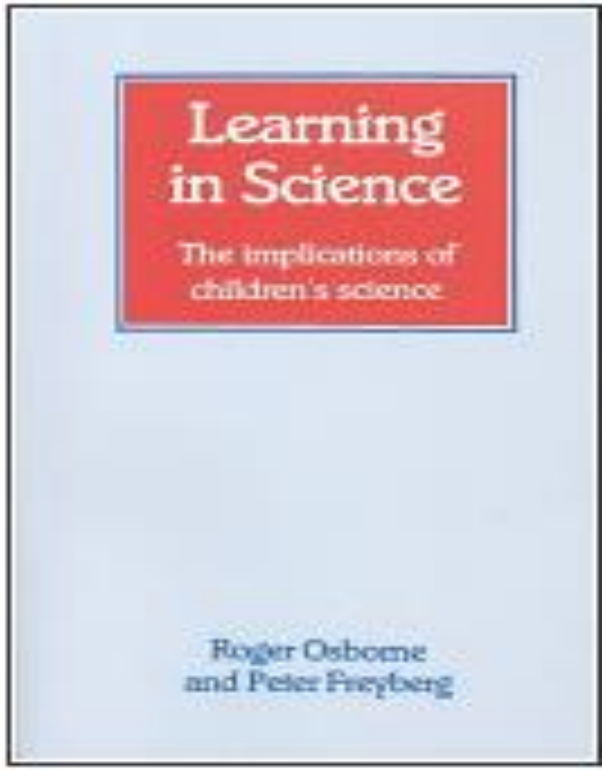
Three worlds come together to shape a student's learning:

- The public world of the teacher
- The world of peers
- Students' private world & experiences in and out of school/home



Pioneering the use of data generated through video, audio, observations, interviews, pre & post tests

1. Setting the scene:
Acknowledging Roger Osborne



A focus on students' ideas as 'children's science' – student ideas as 'alternative' and not *mis*conceptions

In-depth 'interviews about instances', mapping ideas across the years

Working with teachers to build on findings

1. Setting the scene:
A common focus

Both recognised children/ students are active and intentional learners and participants in classroom life

> There is value in attending closely to student ideas and agendas as part of the intellectual, social and emotional dynamic of classroom life

Both had an interest in supporting teachers in their work and developing what Graham referred to as ‘practical explanatory theories’

Explaining the title

Explaining the title:

The dance of agency

The Mangle of Practice: Time, Agency, and Science

By Andrew Pickering

Pickering argues a large number of factors interact to influence the creation of scientific knowledge these are “mangled" together in unforeseeable ways that are shaped by the contingencies of culture, time, and place.

Pickering describes as a dance of agency the way scientists at times draw on their own agency to initiate/ extend ideas (conceptual agency) and at times concede agency to disciplinary procedures (disciplinary agency) all the while needing to take account of the material world (material agency)

Explaining the title:
Thinking about classrooms

The metaphor of dance brings with it ideas of movement, cooperation, coordination, interaction, enjoyment, responsiveness, different styles with different rules, improvisation

Explaining the title:
Acknowledging Terry Crooks

Classroom evaluation affects students in many different ways. For instance, it guides their judgement of what is important to learn, affects their motivation and self-perceptions of competence, structures their approaches to and timing of personal study (for example spaced practice), consolidates learning, and affects the development of enduring learning strategies and skills. It appears to be one of the most potent forces influencing education. (Crooks, 1988)

Explaining the title:
Acknowledging colleagues, teachers, students

Assessment for Learning (AfL)involves a dynamic interaction between planned and informal actions.

It encompasses those everyday classroom practices through which teachers, peers and learners notice, recognise and respond to student learning, throughout the learning (Cowie & Bell, 1998).

It needs to support both student learning and student capacity to learn and monitor their own learning in the moment, and into the future – **to develop student agency**. (Cowie, Moreland & Otrel-Cass, 2013)

Exploring the dance: Towards a practical explanatory theory

Towards a ‘practical explanatory theory’

My focus is on the patterns of participation that contribute to student opportunities to monitor and progress their own learning – it is on student engagement in assessment for learning

Examples come from the following research projects:

- Learning in Science Project (Assessment)
- Interactions in Science and Technology Education
- Photographing science and technology
- Culturally Responsive Pedagogy and Assessment in Science

What contributes to the dance of agency within assessment for learning?

- Transparency
  - What do students need to know to participate?
- Interaction
  - How can students show and grow their learning?
- Responsiveness
  - How can we acknowledge the breadth of what students and their communities have to contribute?

Transparency

Teachers need to let students into their (possibly) hidden goals for learning and their expectations of students as learners (reference the ‘The Hidden Lives of Learners’)

Student agency is achieved by and through them knowing:

- the ‘rules of the game’ in their classroom (Pryor & Crossouard, 2010)

and

- their teacher’s goals for their learning and the criteria for its ‘success’

Transparency is knowing the rules of the game

Different students are differently positioned with respect to ‘the rules of the game’ for participation in the classroom - teachers need to help all students understand them (Pryor & Crossouard, 2010)

Transparency is knowing the rules of the game

When students are positioned as both authoritative and accountable there is an expectation that they will be able to move to access resources (peers & materials) and that they have the authority to use, adapt, and combine these resources. (Greeno, 2006)

Transparency is knowing the rules of the game

S1: In a way I kind of assessed (the teacher). It was the first lesson where we actually did something and it was **interesting to see how** she was going to go about it and **talk to us**.

...

S2: I was just kind of sussing out ... how far you could go with.

S3: And what her limit was.

S2: **If she was prepared to explain it again to you** and not just say it once and that's it.

S1: And to **treat the class all** ... the same ... not certain people.

S3: Get certain treatment or.

S2: Or this one is really bright so he gets special attention and this one is quite dumb so.

S1: "I won't waste my time with her", sort of.

S2: But that didn't happen. (Group of Year 10 Students)

(Cowie, 2000)

Transparency is grounded in trust and respect

If you've been with a teacher for a while, you sort of, you know their reactions and stuff, if you feel comfortable asking them. But, like, if you're not really sure, like, this teacher I had ... he was sort of in and out and, you didn't really know if you were going to ask him at the wrong time or not ... so I sort of left it till home. (Year 8 student)

S1: If you get a really nice teacher who understands and if they knew they've said a big long explanation that might not make sense to you. It would be quite easy [to ask] but if you get a teacher who goes on and uses big words ... it gets a bit harder to ask.
S2: To feel comfortable with asking. (Year 10 students)
(Cowie, 2000)

Transparency is grounded in trust and respect

She helps us with ideas so we extend an idea. And she encourages us to try out more of our ideas and to come up with our own ideas. She helped us with measuring and ideas to think about and how to solve problems. It's the way she uses words and questions you. Sometimes she puzzles you and you have to think about the ideas. (year 7 girl)

Suggestions are still making us think (Year 10 boy)

(Cowie, 2000)

Transparency is grounded in trust and respect

You need to be able to trust others, to be sure their reactions won't be to make fun, talk about or think I am stupid. (Year 8 student)

I kept on thinking that I would put up my hand [and ask a question] but then someone else would put up their hand and they would understand it perfectly and I thought "Well, everyone else probably understands it and I don't". ... then I'd look stupid if I put up my hand and asked her to repeat it. She could have already gone over it ten times since I didn't understand it. I'd look like a X for making her explain it once again because everyone understood it.

(Cowie, 2000)

Transparency through knowing learning takes place over time

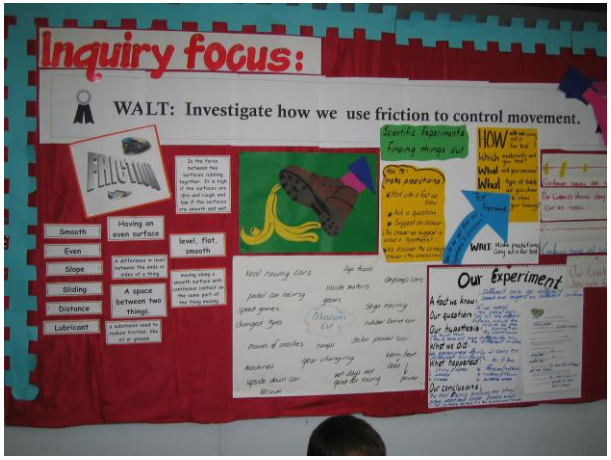
Teachers being prepared to re-explain and revisit ideas sends the message that they are concerned with student understanding rather than curriculum coverage, and that understanding can take time but the effort is worthwhile:

S1: She is not really a rushed teacher. Like before she finishes it she makes sure that everyone understands.
S2: Everyone is right.
Res: So is taking time important?
S's: Yes. (Year 10 students)

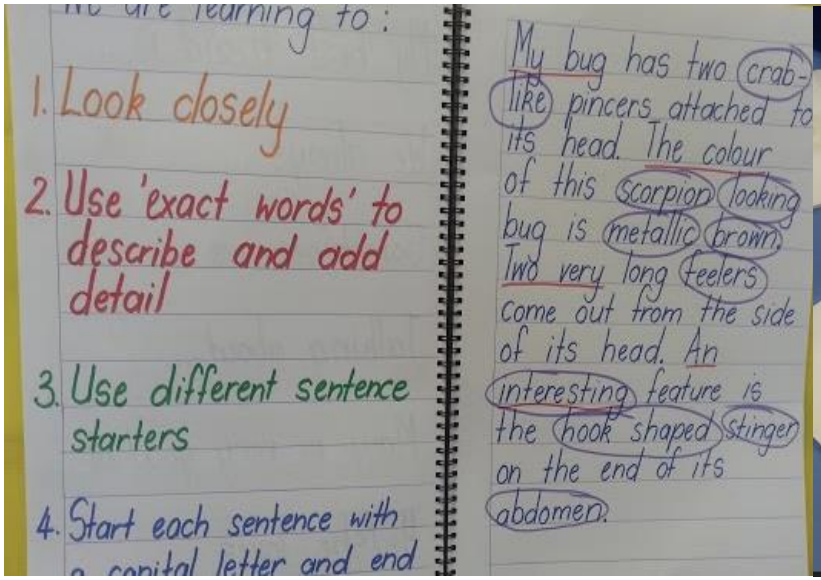
(Cowie, 2000)

Transparency through knowing learning takes place over time

Students often need help to appreciate the connections between “what they did last time, what they are doing now, and the goals they are pursuing” (Mercer, 1995, p. 71).



Transparency relies on teachers talking goals into social meaning



Teacher: Now, we are going to see how we can make Iris's writing even better. Remember our focus yesterday was look closely, and add details. What else could she add to this piece of writing to add more to the details.
Lois: It has a triangle head
Teacher: A triangle head. [Pauses] Now she's looking closely, she's adding details. Sophie, what would you think she could add?
Sophie: She could add that it has stripes. (Dix & Bam, 2016)

Transparency relies on teachers talking goals/ criteria into social meaning

Lesson 1: Students reported the purpose of their completing lesson activities was to have "fun" and to be "busy."

Lesson 2: They reported the purpose was for them to appreciate "What happens to light when it hits various objects". In their words they learned:

- We learned different shapes made "light go in different angles"
- The lesson was about how different mirrors and lenses "can change its paths".

Goals and criteria communicated through formal statements are made meaningful through teacher attention

If a teacher spends half an hour talking about one little atom you know it is going to be important. (Year 10 student)

The same is true for students feeling valued

(Cowie, 2000)

Interaction

How can students show and grow learning?

Interaction: How can students show and grow learning?

Children need to come across the same idea three or four times … ‘allowing them to experience the information in different ways so that they crisscross the intellectual landscape from different angles (Nuthall, 2007, p.161).

Children need access to multiple opportunities, modes and media to make individual and collective meaning, to show what they know and can do, and to gain and act on feedback.

The value of talk with peers and the teacher: Individual interaction

S: I ask a friend ... if it was really, really important and none of my friends knew it I would ask the teacher but usually my friends do.

S1: Sometimes you've got to ask the teacher though, because the bits on ions and how you make [compounds], I really didn't understand that. I couldn't understand that. I asked the teacher over and over again with the whole group. And I ended up just forgetting about it for a while and when the teacher wasn't busy I asked her to come and I finally got what it was.

S2: You were asking us for a while, weren't you. We weren't very helpful because ... it's hard, sometimes, you don't know how to put it into words.

(Cowie, 2000)

The value of talk with peers and the teacher: Group interaction

We don't normally like putting up our hand and saying "I got this answer", we normally say "Our group". ... Because we do all our work, basically, together. ... if we put up our hands and say, "We got this answer" and she realises it is wrong she will come down and talk to us as a group, not individually. (Year 7 student)

S1: We asked the other table.
S2: We do quite often.
S3: It is usually cos she has explained it to them already.
S2: We ask other students quite often just to see if we did it right. We ask them what their answer was and we compare it ... if it is different we think well one of us must have done it wrong so you do it again ... or ask the teacher. (Year 10 students)

(Cowie, 2000)

The importance of word choice

Well if they (teachers) know what you know, and what you understand then they can put it as, like make it to your level of understanding .... They can target your problem areas. (Year 10 student)

S1: She knows our level of work. Like the four of us are pretty much at the same level in science.
S2: Compared to the others. Like we are not.
S1: She knows she can't talk to us with all those sciencey words. She just uses everyday words. (Year 10 students)

(Cowie, 2000)

Drawing to express & develop ideas

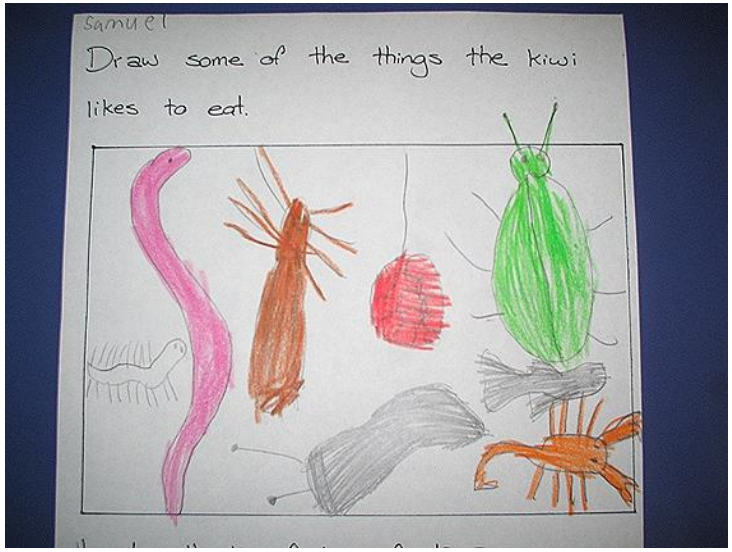
The students (age 5 years) were to draw a kiwi:

> Teacher: We don't want any pink kiwi. Let's look at the photo to see how we can draw it. You need to draw it the right shape and with all of the bits - legs, feet, feathers, beak and eyes. Then you can colour it. You need to make sure it fills the page, a nice big kiwi. Here's your paper. Off you go.

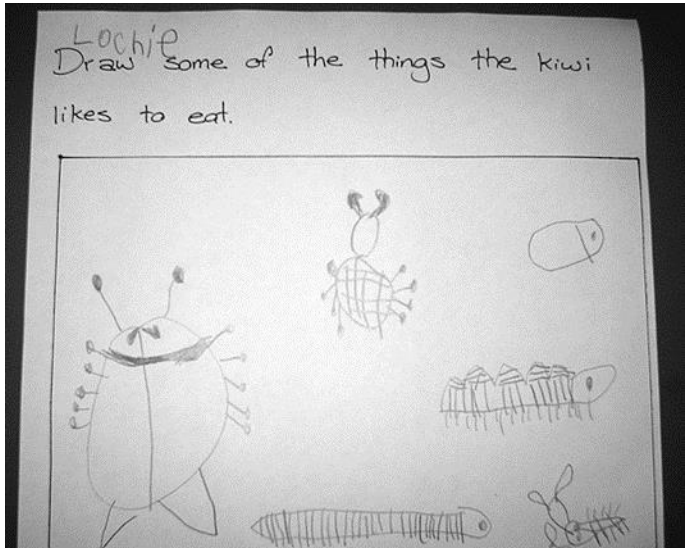
A kiwi photograph was on easel as a background to the talk

Cowie & Moreland, 20070

Drawing and talking/ writing together



Samuel (6 years) - drew a spider with eight legs because it was *not an insect*, the *crayfish with claws and a tail*, and the *bug with antenna to feel with*.

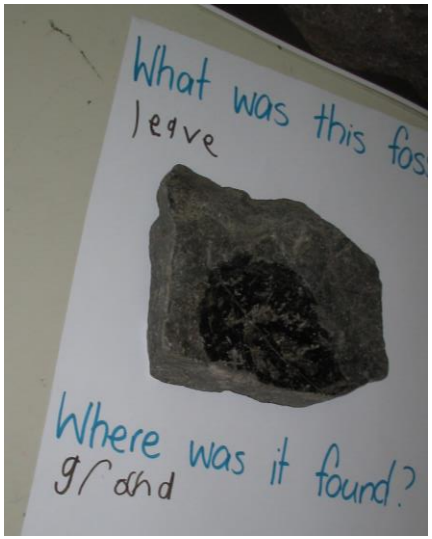


Lochie explained his caterpillar's *bumps* were *so it goes like that*. He indicated a squeezing rippling movement.

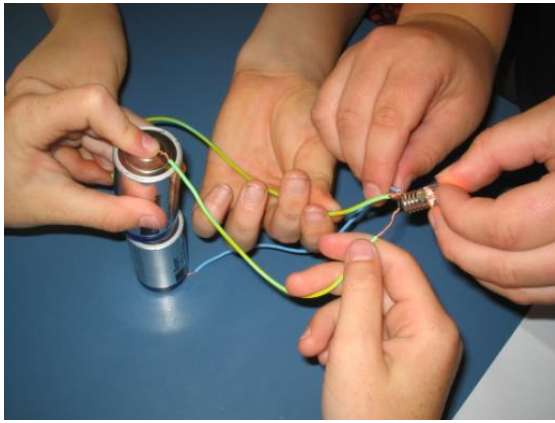
Cowie, Moreland & Otrel-Cass, 2013

Artefacts can structure and resource interaction

The importance of artefact selection



Need to consider size



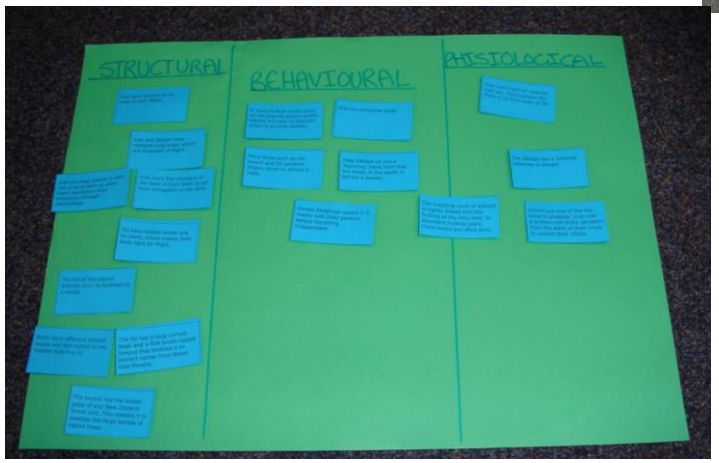
Cowie, Moreland & Otrel-Cass, 2013)

Artefacts support discussion & feedback

Can involve a number of students

Movement of an object requires negotiation

Can reduce the need for writing



Can provoke debate

An extended example of interaction

Students' prior knowledge elicited via drawing and writing then valued through display

Students had easy access to resources

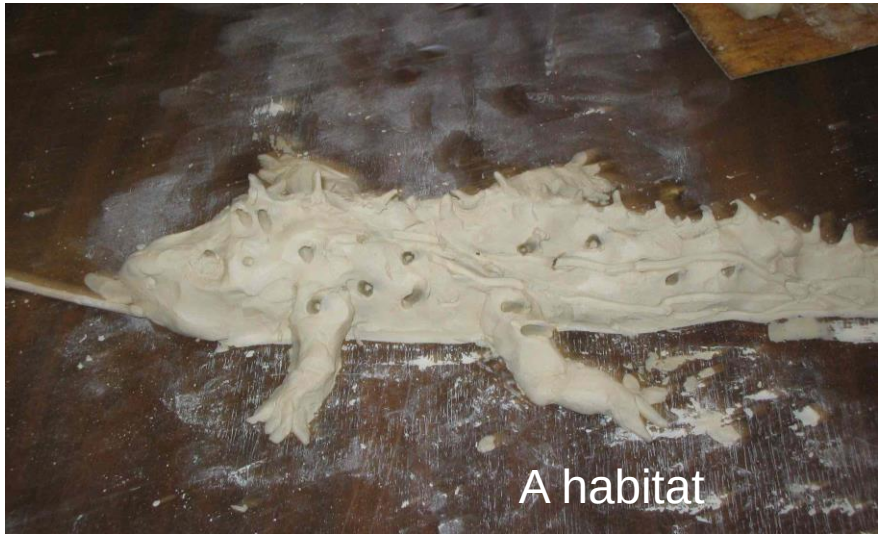
Students posing questions with the help of senior peers

The young students, with the teacher and senior peers posed how, what, where and why questions about tuatara. They then read books, searched the internet, and went on a field trip to answer their questions

Multiple sources of information and experience

Parents were learners and teachers alongside students

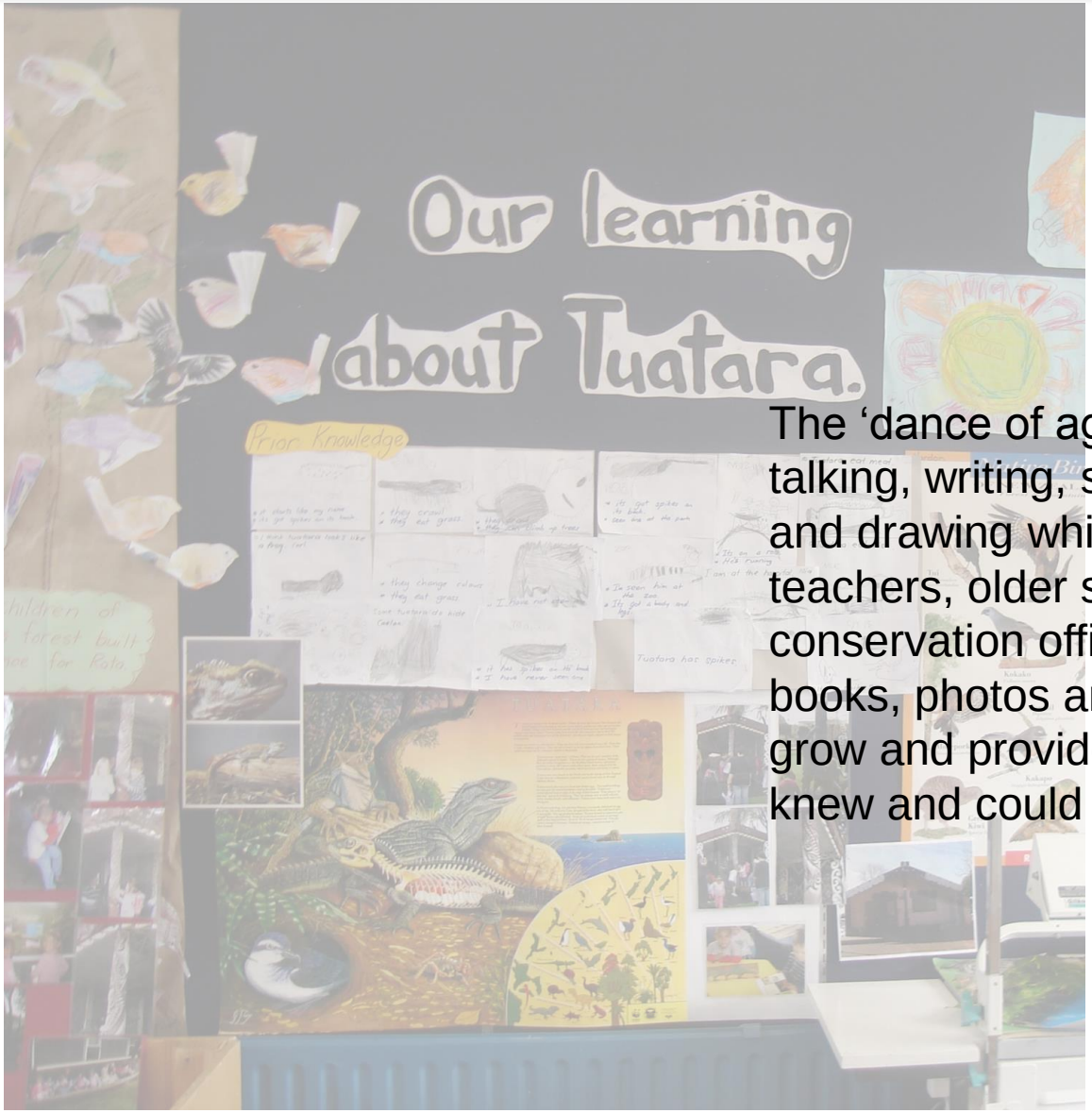
Clay modeling as yet another way to represent ideas and gain feedback



Completing a jigsaw – a case of in-built criteria

Acting out the ‘Tuatara Stomp’ song – identifying the placement of legs

An extended example



The ‘dance of agency’ involved students talking, writing, singing, dancing, modeling and drawing while working with the teachers, older students, parents and a conservation officer as well as using books, photos and the internet – to show, grow and provide feedback on what they knew and could do

Responsiveness

How can we acknowledge the breadth of what students & their communities know?

Responsiveness: How can we acknowledge the breadth of what students & their communities know?

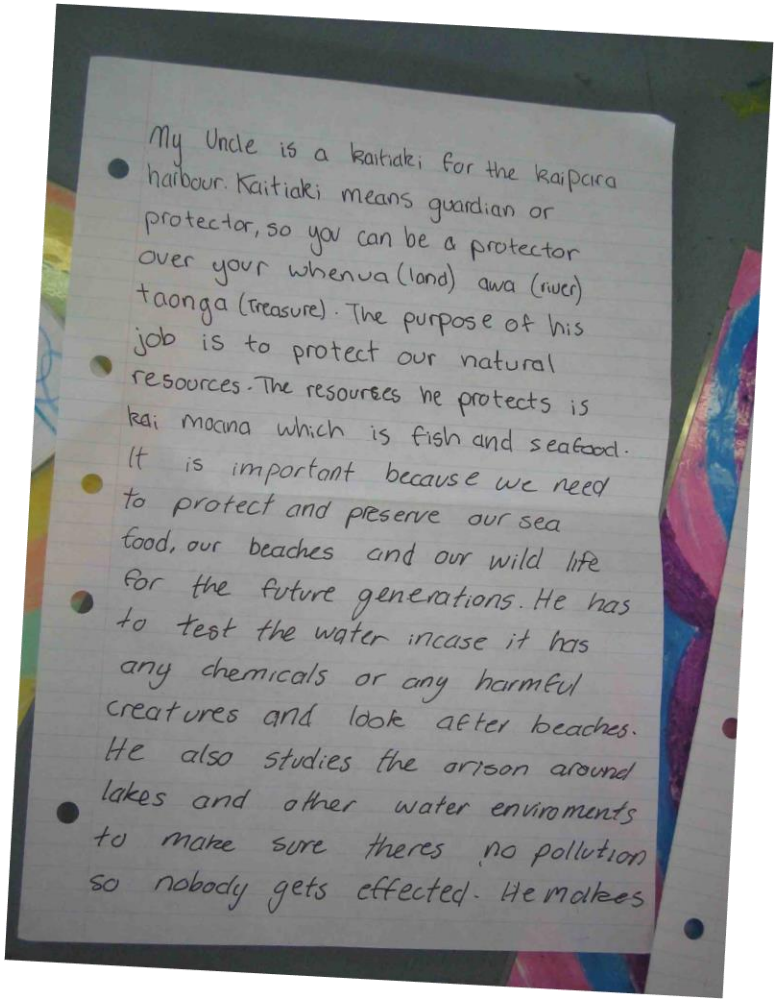
The third world of the learner recognises the continuity of being between home-and-school and school-and-home. (Nuthall, 2007)

Students (and their families) can be active partners in the dance of agency/ learning - they have knowledge worth sharing with each other

Assessment requires responsiveness to unique learning and learner contexts. It includes collaborative exchanges of information between participants in a process of reciprocal learning or *ako* (MoE, 2011).

Establishing responsiveness:
Who can be tuakana? Who can be teina?

inviting ‘funds of knowledge’ from home into the curriculum



Parkinson, Doyle, Cowie, Otrel-Cass & Glynn, 2011)

Inviting whānau engagement at the beginning not just the end of learning

The teacher explaining the unit focus to whānau

Students reporting back to whānau

Responsiveness
Supporting students to share their learning

Students persuaded their teacher to allow them to create a dramatic performance 11 weeks after completing a unit on solar energy

Developing the performance engaged students in revisiting, synthesising and thinking how to present science idea to their peers and parents in an interesting and informative manner – they gave 3 performances

When students - individually and collectively - make contributions to the “vitality of the community” via public performance their sense of self and community is transformed, as are relationships among students, teachers, and the community (Miettinen, 2005)

(Cowie & Moreland, 2015)

Student reflections on performing

I found changing the science ideas into a performance a bit hard. I said ‘Miss F. how are we going to show them all the solar cookers and thermometers?’. Like I thought we would be repeating the whole learning. ... We changed the science learning into a play. It helped that we had to write a script at the start (Year 6 girl)

I think Room 1 got the science because they asked a lot of questions. ... It made me feel proud to be showing our learning to the other children. (Year 6 boy)

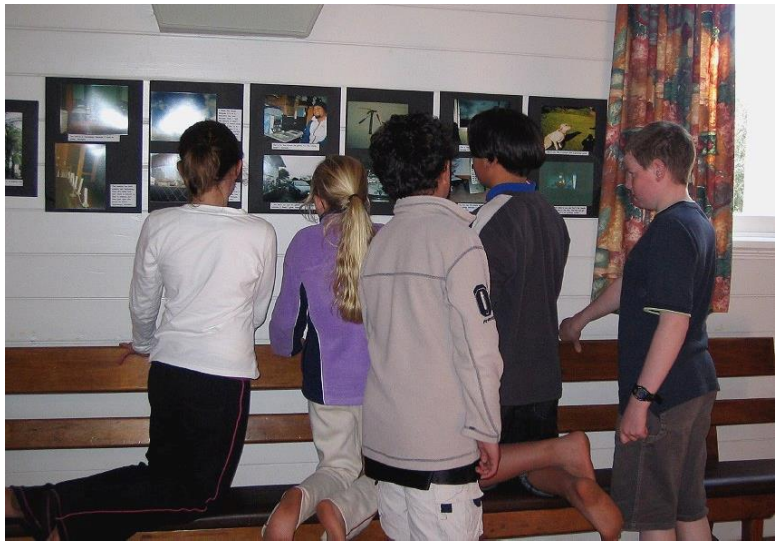
The show brought all our learning together. It was the last thing and we can all remember it and celebrate it (Year 6 boy)

(Cowie & Moreland, 2015)

The research study asked students to photograph what to them was “science.”

Parents and families involved but asked not to direct

> *My dad helped me get things out and got me set up*. (Year 2 girl)



Parents who came to the exhibition were amazed at what their children knew, rang to encourage others to attend

Moreland & Cowie, 2005)

My proposal

Students are sensitive to the nuances of classroom life - they need and value opportunities to take the initiative, to share ideas and help each other, to contribute their knowledge, to access feedback and to be involved in decision-making about the reasonableness of methods and ideas

Teachers can usefully consider when and how to encourage students to exercise their own agency, and when and how they need to hold students accountable for explaining and sharing ideas to others as well as how they might use material resources to support and resource student learning.

Supporting a dance of agency

The balance of opportunities and accountabilities a teacher achieves with her/ his students shapes what it means to know and be a successful learner in their classroom

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