



Journal from Peter Beveridge, Pennington School R-7

2018 Ruth Dircks Scholarship Recipient

Monday 9 July 2018

The day begins early with a brisk walk down King St, Newtown to the venue for CONASTA67. There is a hive of activity with delegates and exhibitors all mingling and eager to kick off an exciting three days of learning, engaging, and socialising.

The free coffee provided via an Education Perfect keep cup is an instant winner among the delegates. Upon registration, all delegates receive a satchel packed with promotional material and a very handy water bottle courtesy of Sydney Water.

First up is the **Welcome to CONASTA** in the Auditorium.



Senator The Honorable Simon Birmingham, Minister for Education has just announced the Government's initiative to place mandatory STEM teachers in Australian secondary schools. He spoke about the need for our children to build a love and passion for Science and Technology and by having specialist teachers, our students will be better prepared for the world before them.

Dr Tanya Latty spoke about the very interesting quirks and features that some of our smallest neighbours, the ants, have done to develop survival and efficiency. She then went on to talk about slime moulds and how they live everywhere, even within a large city such as Sydney. Definitely need to show the kids these, maybe they won't bug me to make slime every single day now! [Maze solving by amoeboid organisms](#).

Workshop Sessions

Gamification: bringing elements of gaming to science education - Claire Seldon

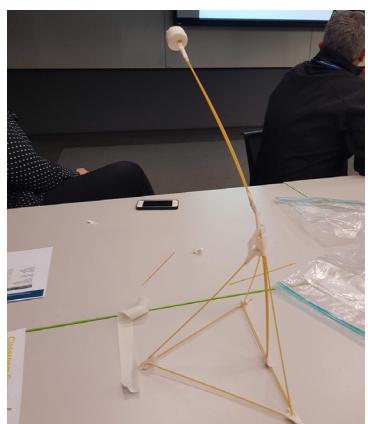
Elements of games. Build discovery and story into teaching because they add the most to the engagement. Claire spoke to the group about adding even the smallest elements of gaming into teaching to engage students and provide them with ownership and challenge.

Primary science experiments - Simon Crook

How to continue building inquiry skills through experiments. Emphasis on giving students the know-how and skills to eventually design their own experiments to build the inquiry skills. These skills are present from F-8 in two year bands and layer upon the Foundation curriculum along the way.

Using the Australian Professional Standards for Teachers to facilitate pedagogical change in STEM - Adrian Dilger

An enlightening workshop on the use of the APST standards to illicit better pedagogy out of teachers. I found that I may indeed be working at Highly Accomplished in some of the standards as I am mentoring other teachers through the transition to using the STEM Space at Pennington School R-7.



Make science come to life in early years - Libby Moore

Using Lego WeDo 2.0 to educate younger students, we saw how simple coding can lead to links with science content. There was emphasis on the scientific method and inquiry skills and how to logically structure further extension questioning.

Stanhope Oration

Finally it was time for the ASTA Awards and Stanhope Oration. I was lucky enough to receive the Ruth Dircks Scholarship for 2018 alongside Amanda Hughes from Tasmania. It was inspiring to be among peers and other amazing teachers receiving recognition for hard work, innovation and passion for young learners in STEM.

Tonight's keynote was by the incredible Dr Lisa Harvey Smith. She spoke about the Square Kilometre Array project which aims to allow humankind to search farther and more concisely into outer space than ever before. It was so exciting to hear about the next stage of the project due for construction next year which would see upwards of 1 million diapod radio satellites that can receive different lengths of radio waves from millions of light years away.



Tuesday 10 July 2018

I arrived back to CONASTA67 after a refreshing sleep following an incredible first day at the Conference. What an absolute treat it has been to meet other teachers from around the country who believe in STEM teaching and learning, and who also have an ignited passion for pushing our students to be curious.

First up today was Prof. Richard Garrett from ANSTO who I caught only the latter stages of, but he was speaking to the audience about the progress being made with facilities like CERN in seeking further advancement in nuclear sciences.

Prof. Dietmar Muller was an entertaining speaker who showed a vast array of not only his work, but the work of many young university students using Open Source software to accurately recreate tectonic plate movement over the last 100 Million years or so. He showed how the formation of the Eastern Highlands of NSW appears so different to the creation of raised rock areas more typically caused by plate movement and deformation. It was interesting to see how Earth's surface has evolved over time and the explanations for various features we see now as a result.

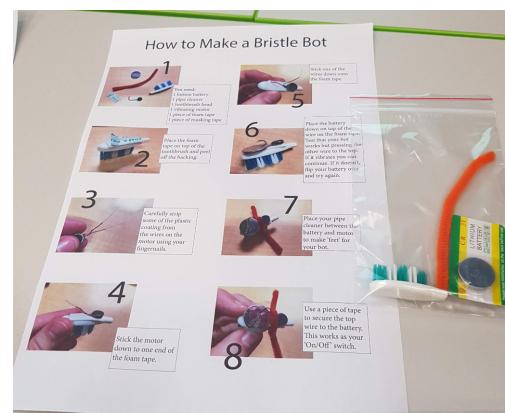
Dr Alan Finkel, Australia's Chief Scientist & Engineer spoke from one science nerd to a room full. He used the classic Science Fiction novel 'Dune' as an analogy to how STEM thinking and 21st Century education can be used by our students to solve problems, such as those faced by the protagonist Paul. It was interesting to hear his take on the current view on STEM education in our schools and how often his words are misconstrued to other meanings. This in part means a very unclear definition of what STEM teaching should be and what it should do by people from all aspects of connection to the profession.

Of course there was mention of the part of businesses in education and current political climate which is an interesting notion which could have consequences for our learners in the future.

Workshop Sessions

STEM - The 6D solution - Anthea Ponte

This workshop felt most like home with an SA presenter and fellow Adelaidians in the room, as well as having already connected with Lee Watanabe Crockett's Solution Fluency. This was an opportunity for me to see another teacher



further along in their journey with SF and how they have implemented it in their teaching. It became apparent that it will indeed work, however I may very well need more time to really find how it will click for me.

Questacon - Jared Wilkins

A great way to finish the day of workshops was with a presentation by Jared from Questacon. He talked/presented to the group about how to conduct yourself when doing science demonstrations. It was very confirming to hear that my in class goofiness is sometimes very memorable when delivering complex scientific concepts. His main point to make was that science demonstrations must build positive emotional engagement and cognitive engagement. Jarad also showed throughout his presentation the Four Pillars of Presentation: Practice, Application, Research and Passion.

In the evening I had been convinced by others to attend the **Conference Banquet** and I was NOT disappointed one bit. The banquet confirmed for me that CONASTA really is a family, especially when members of the organising committee and other inspiring teachers were speaking to me and really treating me like one of their own. To be welcomed so quickly was an amazing feeling.

One small conversation I remember having was with Prime Minister's Prize winner Sarah Chapman and Brett McKay who both were so genuinely humble and insisted that they were not special, but just one of us: the science / STEM teachers trying to make a difference for our students.

Wednesday 11 July 2018

Sadly, today would be my last day at CONASTA67 so I was of course devastated to be leaving my new family, but excited knowing that whispers were already starting among my new group of plans for 2019.

After last night's dinner, coffee was well and truly needed to battle the indulgence of the night before.

I attended a keynote by Christine Preston on the use of toys to build scientific curiosity in students, and how drawings can be used to help students explain concepts. I found it resonating to remind myself that a drawing by a student can always be critiqued to really get to the core concept the student is trying to share, even if it is non-verbal.

Following morning tea, one of my newest friends Rachael Lehr presented her workshop on Hooking Girls into STEM, an amazing display of her work in developing a STEM club at her school. It was less about the separation of the girls from the boys, but more about being intentional about maximising learning time. Rachael shared her journey of moving away from doing the 'whizz-bang' fun science experiments with little follow on in future sessions, to the more deliberate planning and implementation of STEM learning for students.

Three keynotes closed out CONASTA67 with a highlight being Brad Tucker's engaging talk about the role of Australia in future space exploration and why it is so important to prepare our children for this industry.

Huge thanks were given to all members of the organisational team involved in the planning of this year's conference and then a hilarious handover to delegates from the NT who launched CONASTA68 in Darwin.

My new family of CONASTA-rites have already begun planning for next year and I am incredibly grateful for the opportunity to attend my first CONASTA courtesy of the Ruth Dircks Scholarship 2018.

- Pete

