Vital Venoms and Practical Poisons:

The Science of Communication - Making Science Accessible and Interesting – An Introduction

I recently had the amazing opportunity to undertake a placement at Plantasia, Tropical Zoo, Swansea. If you haven't visited yet, it's a definite must see! Plantasia is home to its very own tropical rainforest, housed inside an amazing glass pyramid-shaped greenhouse, and features over 50 different species of animals, many of which are threatened or vulnerable in the wild.

Plantasia isn't just an amazing building; it's also a hub for learning. Their education programme is dedicated to reaching people from all backgrounds and stages of learning. Since 2019, they've delivered over 800 workshops, hosted more than 2,800 tours and experiences, and conducted over 100 outreach sessions. Really impressive statistics!

Plantasia, Swansea main Building

One of their newest, and most exciting exhibits, is **Vital Venoms & Practical Poisons.** This exhibit invites visitors to meet animals that are often feared and misunderstood, while revealing the fascinating science behind their survival strategies and adaptations. It's all about challenging common perceptions and sparking curiosity.

Vital Venoms & Practical Poisons Exhibit

When I visited the exhibit, I was really impressed by their attention to detail. Everything is designed to encourage curiosity. The signage is engaging, with large accessible fonts and concise text to avoid overwhelming visitors. The visuals are vibrant and eye catching, and there are plenty of bite-sized fascinating facts to keep young learners engaged. The exhibit features loads of amphibians, invertebrates, and reptiles: My personal favourite was Mango, a Golden Ringed Cat Snake. Isn't that a cool name?

As part of my placement, I was given the task of designing an educational talk for children aged 7 to 11, inspired by the **Vital Venoms and Practical Poisons** exhibit. The talk would focus on the unique properties of the animals featured, exploring how their venoms and poisons can be used for medical purposes (treating pain, cancer, and diabetes), and why conserving these animals is vital for the ecosystem. No pressure?!

Communicating complex science to young learners isn't an easy job. There are so many theories and models to consider, like the deficit model, dialogue model, interactive model, framing theory, cognitive load theory, narrative theory, and constructivist learning theory. Each has its strengths and limitations, and I need to critically evaluate which ones will work best for my project and audience. As someone with a hearing impairment and autism traits, I also need to think about which approaches are accessible to me.

Vital Venoms & Practical Poisons Exhibit

To prepare, I observed the education team deliver a workshop called Rainforest Rangers to groups of young school children. It was really obvious that these workshops had been fine-tuned over time, benefiting from feedback, observations, and self-reflection. I noticed how they incorporated elements of established science communication models:

- Simplifying science information with jargon-free language reflected the **deficit model** (Bucchi, 2004). The limitation of the deficit model is that it is one directional.
- Using questions to create two-way interaction showcased the **dialogue model** (Trench, 2008). The dialogue model works well with small groups but is challenging and time consuming with large groups.
- Props and live animals for hands-on experiences sparked excitement and aligns with **constructivist learning theory**.

While I won't be using venomous or poisonous animals as props in my workshop, for obvious reasons! I'm thinking of using soft toys from the gift shop as a safe and fun substitute.
Another thing that stood out to me was how each staff member had their own way of delivering talks which clearly influenced engagement. They connected with learners in different ways, adapting my own communication style will be a challenge, especially considering my inclusivity needs. I'm determined to make it work!

Speaking of inclusivity, I have to give a special round of applause to Plantasia for their efforts in this area. The venue is fully accessible for mobility scooters, wheelchairs, and prams. They're part of **InclusAbility Swansea** and host special out-of-hours events that are inclusive for all. They also partner with the **National Autistic Society Swansea** to deliver Quiet Hour events tailored for individuals with autism. Plus, being proud of their Welsh heritage, all signage is bilingual, and workshops are available in Welsh.

I can't wait to share more about how I develop my talk in the next blog post. Stay tuned for part two of this journey into the fascinating world of science communication!