

ASTEN Fellowship report 2012

Priscilla Gaff
Program Coordinator – Life Science



MUSEUMVICTORIA

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Australasian Science and Technology
Exhibitors Network

ASTEN FELLOWSHIP REPORT 2012



The obligatory pose out the front of the Science Centre, Singapore.

In March 2012, I was fortunate to receive an ASTEN Professional Development Fellowship to visit the Science Centre Singapore.

As a Program Coordinator – Life Science at Museum Victoria, based at Melbourne Museum, I wanted to learn about their extensive suite of digital technology programs, as well as science exhibitions.

I am sincerely thankful to ASTEN for the opportunity to spend time learning at the Science Centre Singapore.

I am also very grateful to the staff at the Science Centre Singapore for hosting my visit, in particular Dr Ei-Leen Tan, Assistant Director, Technology & Creativity Group, Education Programmes Division.

I would also like to thank Museum Victoria for supporting this professional learning opportunity.

I hope others in ASTEN find this report useful, and I welcome questions or comments.

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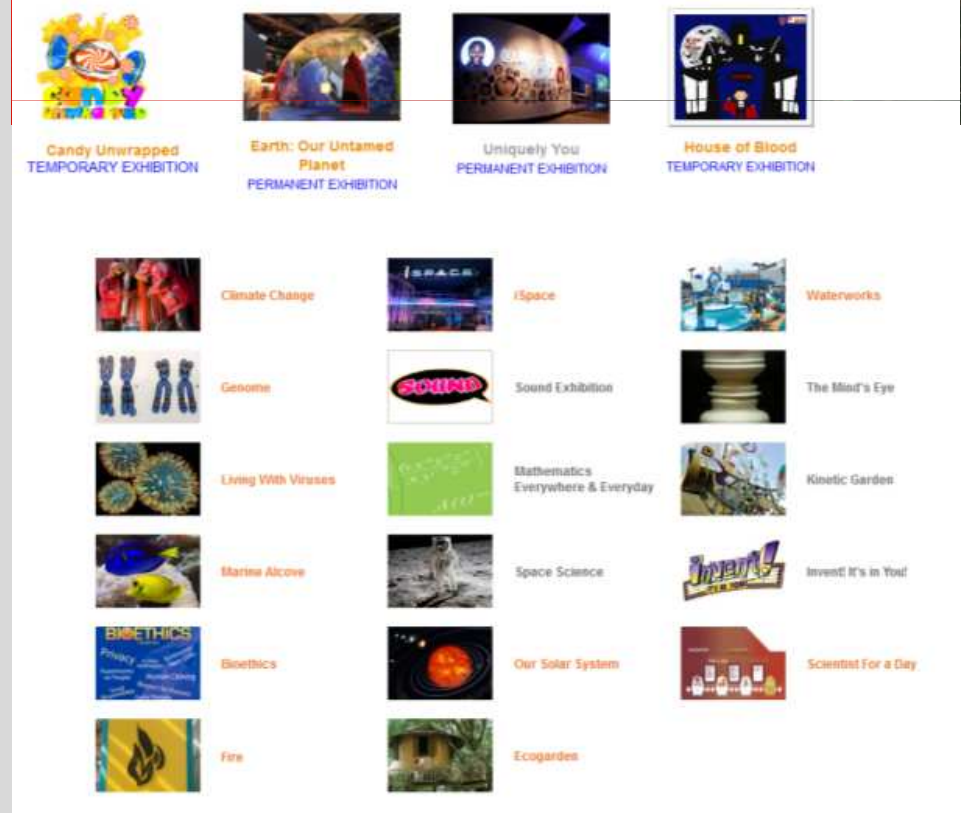
Science Centre Singapore

The Science Centre Singapore opened in 1977, but was originally conceptualised in 1969.

Their funding comes from the Singapore Ministry of Education.

Each year they have 1.1 million visitors. Approximately 20% of their visitors are students.

They have some 21 exhibitions. They change over their exhibitions approximately every 5 years. They are huge!



Education Programs

They have over 100 programs. They have a large education team. The photo shows their staff in the Education team.

Programs run from 9am and 2.30pm. Teachers bring in school groups to the 2.30pm session which is after school hours.

In 2010, 240,000 students attended enrichment programs.

<http://www.science.edu.sg/schoolprogrammes/Pages/OverviewEnrichmentProgrammes.aspx>

This group, managed by **Dr Ei-Leen Tan**, looks after the Digital technology programs and is the team that looked after me for the week.

| STAFF LEAVE CHART | |
|-----------------------------------|---------------------------|
| EDUCATION PROGRAMMES DIVISION | |
| <i>PS: Propagators of Science</i> | |
| Name | Date |
| Dhanaraj | |
| Lim Soo Hiang | |
| LIFE SCIENCES GROUP | |
| <i>LS: Lovers of Science</i> | |
| Dr Lee Song Choon | |
| Petrina Then Yan Ting | |
| Charissa Lin Enying | |
| Mrs Savita Sharma | |
| Mrs Chee Meaw Eng | |
| Patrick Wang Chee Boon | 26/4 - 9/5 |
| Lim Syn Yin | |
| Senthil Kumar | 30/3 - 1/4, 27/3 |
| Ng Mei Bao | 5/5 - 14/5 (AL) |
| Seah Jianxing | 5/4 (AM), 10/4 (AM) |
| Gurpreet Hansra | <i>Married to Aquatic</i> |
| Nurashikin bte Ramli | 5/4 |
| Prabha d/o Saundarajoo | |
| Xu Wan Wei | <i>POBBY GRH</i> |
| Danyse Beh Sze Hsien | 27/3 - 3/4 |
| Nambirajan s/o Kandiah | |
| TEACHERS ON ATTACHMENT | |
| Yeo Woei Ter | 15/4 - 9/5 |
| PHYSICAL SCIENCES GROUP | |
| Name | Date |
| Mrs Ong Ho Lan | |
| Cassie Dong | |
| Everlyne Tan Hwee Ming | 15/4 (AM/PM) |
| Andrew James Mella | |
| Yong Jian Yi | |
| Vivek Kin Guan | <i>with group</i> |
| Mak Li Hal | |
| Er Ya Qin | <i>Seah's</i> |
| Ong Shu Yi | <i>Clipping Beauty</i> |
| Murni Hoeng | |
| Halizah bte Riduan | |
| Kelly Yeng Lee Lee | |
| Mohd Amir bin Abd Latiff | |
| Hadjah bte Rals | |
| Ismail bin Jusuf | |
| Emily Mak Teo Chy | |
| Emilyn Pheng | |
| TECHNOLOGY & CREATIVITY GROUP | |
| Dr Tan El Leen | |
| Jacqueline Apaga Teo | |
| Wong Yit Chee | |
| Alfred Lim Wee Teck | |
| James Lim | |
| Muhammad Shahrudin | |
| Ong Eng Wen | <i>Boys</i> |
| Emilyn Escabarte | <i>inverted</i> |
| Siti Nuruljannah bte Md Monjlat | |
| Chris Sanchez | 29 - 4 Apr |
| Mohamed bin Sued | |

Digital Programs

In the top image you can see the vast range of digital programs on offer to schools.

The image below is part of the 'Experience Filmmaking' program.

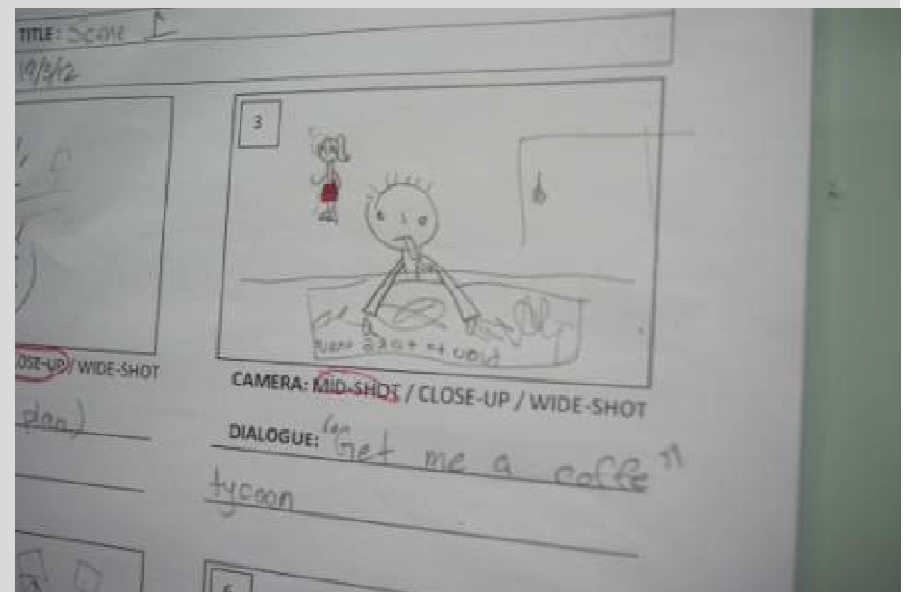
During the program, students storyboard their idea (bottom image shows a section of a students storyboard), shoot their movie in a green screen room, and edit in a room set up with Apple computers.

The setup of the rooms for the program is excellent. The 'ideas room', filming room, and editing room are all in the one area. Students could easily work in small groups and move between the spaces depending on what part of the task they were working on. The students were very engaged.

The cost per student is \$20, and the program takes place over 3 modules, at 3 hours per module.

Interactive and Digital Media

| Title | Type | Levels |
|---------------------------------------------------------|------|----------------------|
| Content & Presentation | | |
| Studio & Outdoor Reporting | LDem | 4 5 6 7 8 9 10 11 12 |
| Effective Video Storytelling | LDem | 4 5 6 7 8 9 10 11 12 |
| Crazy Creatures | PLab | 4 5 6 7 8 9 10 11 12 |
| Stop Motion Science - NEW! | PLab | 4 5 6 7 8 9 10 11 12 |
| Electronic Designing | | |
| Electronics Fundamentals - NEW! | PLab | 4 5 6 7 8 9 10 11 12 |
| Start Programming from Scratch - NEW! | PLab | 4 5 6 7 8 9 10 11 12 |
| Photography & Videography | | |
| Creative Mobile Phone Filming | PLab | 4 5 6 7 8 9 10 11 12 |
| Module 1: Photography Essentials 101 and Basic Lighting | PLab | 4 5 6 7 8 9 10 11 12 |
| Module 2: Mobile Photography | PLab | 4 5 6 7 8 9 10 11 12 |
| Module 3: Portraits | PLab | 4 5 6 7 8 9 10 11 12 |
| Module 4: Landscapes and Architecture | PLab | 4 5 6 7 8 9 10 11 12 |
| Module 5: Macro Photography | PLab | 4 5 6 7 8 9 10 11 12 |
| Module 6: 3D Photography | PLab | 4 5 6 7 8 9 10 11 12 |
| Creative Photo Edits | | |
| Module 1: Tools 101 | PLab | 4 5 6 7 8 9 10 11 12 |
| Module 2: Skills and Techniques | PLab | 4 5 6 7 8 9 10 11 12 |
| Experience Filmmaking! | | |
| Module 1: Stories & Storyboards | PLab | 4 5 6 7 8 9 10 11 12 |
| Module 2: Production & Filming | PLab | 4 5 6 7 8 9 10 11 12 |
| Module 3: Post-Production & Editing | PLab | 4 5 6 7 8 9 10 11 12 |
| Magic of the Green Screen | PLab | 4 5 6 7 8 9 10 11 12 |
| Movie Sound Effects | PLab | 4 5 6 7 8 9 10 11 12 |



Augmented Reality Program

I was also able to observe their augmented reality program: The Wolf's Story. The program is hands-on, and designed to encourage students to think beyond the tale text of the Wolf's Story and improve their language skills through working together as a group. I observed a grade 4 class.

The story they use to create their augmented reality clip, The Wolf's Story, is traditionally taught in Singaporean schools.

They use software called WizDirector, which is available to SCS for free. This does mean that they are only able to do one story using the program – despite WizDirector having far greater scope.

Click below to view a clip on the program being used in class.

http://www.mxrcorp.com/index.php?option=com_content&view=article&id=203:wizdirector-classes-in-science-centre-singapore&catid=1:mxr-news&Itemid=115



Augmented Reality Program

Again, like the 'Experience Filmmaking' program – the room is exceptionally well setup.

They have 40 computers in the room, with enough hard drive to be able to deal with the program without crashing.

Plus there are multiple projectors and screens around the room – meaning that all students can easily see what the teacher is demonstrating on his computer.

The teacher is also able to freeze all of the students' computers in one move – meaning that he can easily get their attention back when he needs to explain the next step.



Augmented Reality Program

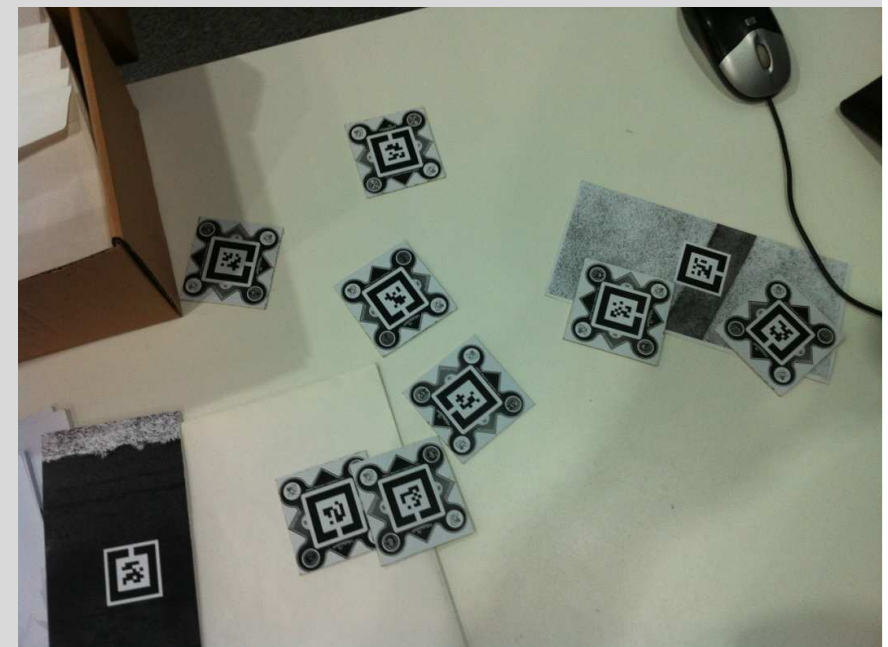
During the program the students create a digital story, using the WizDirector program, based on the Wolf's Story.

To make their story, the students place the various black squares (as in the bottom photo) underneath the webcam – and a 3D object appears on their screen, such as tree (top photo) or the wolf or grandma.

The students can easily place various objects into the space, and then record their voice to narrate a story over their augmented reality clip.

To see a YouTube video of someone building a clip using WizDirector click here:

<http://www.youtube.com/watch?v=aUNGZMUW5gE>



Observations

The students and teachers had a fantastic time in the program. All of the students were thoroughly engaged, and the interface was very user friendly. In terms of a literacy program, it was fantastic. Indeed the students participating in the program I observed spoke English as their second language, yet as part of the program they were narrating the story in English. Incidentally, the official language of Singaporean government schools is English. However, the school I observed was not a government school, and hence was not teaching primarily in English. The Singapore government recognises four official languages; English, Malay, Chinese (Mandarin) and Tamil, and the signage at SCS was in four languages.

Ways that we might adapt such an approach here would be to:

1. Find a way to enable the students to either upload their clips to a website or email it back to themselves (the software did not allow for that to be possible).
2. Link it directly to an exhibition or collection material. Museum Victoria has been building its collections and undertaking research for over 150 years. This has led to a slightly different programming model compared with SCS. At MV our programs make direct connections to our collections, research and or exhibitions.



Life Science Programs & the Eco Garden

As well as digital programs, the Science Centre Singapore offers a large array of Life Science Programs, and has numerous labs in which those programs can take place. The top image gives you an idea of what each lab looks like. They have a great number of labs like this one. Their most popular Life Science programs are the DNA programs.



And there were more labs – outside. As part of their Nature Programs they have an Eco Garden and programs such as the Pond Life program.

The outdoor environment has multiple nature labs, ponds, vegetable gardens and herb gardens



MindFest

As well as their many education programs, Science Centre Singapore holds many amazing science competitions and events. One that I observed was MindFest.

MindFest is an annual festival, with the aim to bring together “playful inventors” of all ages.

The program runs for 2 weeks for schools, and over one weekend for the general public.

This image on the right shows the various activities that are offered as part of MindFest.



MindFest

School groups can participate for free in MindFest, whereas families on the weekend pay per activity (top image). Staff at SCS felt that whilst they did limit participation by charging, participants had a better experience as a result.

Again, the set up of the program is fantastic. In the image below you can see one of the stations for an activity. They set up the 6 stations in a huge hall, during a time when they didn't have a touring exhibition in the space. Each station was staffed.

It is a great use of space and engaging programming at a time when a large exhibition space didn't have an exhibition.



A hand-drawn sign titled "MindFest Pricing" in red marker. It features a table with two columns: "Package" and "Price". The table lists five packages: 3 Activities for \$8, 4 Activities for \$10, 5 Activities for \$12, 6 Activities for \$14, and 7 Activities for \$16. A red starburst graphic with the word "WOW!" is next to the 7 Activities package. Below the table, it says "activities and get 1 additional activity FREE".

| Package | Price |
|--------------|-------|
| 3 Activities | \$8 |
| 4 Activities | \$10 |
| 5 Activities | \$12 |
| 6 Activities | \$14 |
| 7 Activities | \$16 |

WOW! activities and get 1 additional activity FREE



5 EXHIBITION IDEAS I LIKE...



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Theatrical ways to talk about science:

Both of these exhibits presented science concepts using a theatrical backdrop.

The image below is from the Climate Change exhibition, and through the shadow puppets having a conversation we learn about climate change.

The two images on the right come from the Living with Viruses exhibition. Through this display we learn about small pox vaccination. The image rotates, but the 'theatre' backdrop around the cartoon image remains. Each image tells a part of the story of how a vaccine was developed.



Visitor Participation through voting

Both exhibits in the photographs allow the visitor to vote, and for their vote to be displayed and become a meaningful part of the exhibit.

The image on the right comes from the Uniquely You exhibition. The visitor is invited to smell the various scents, and then vote (pink for girls, blue for boys) on which scents they find attractive.

The image below comes from the Bioethics exhibition. Visitors are asked a bioethical question about whether they would change themselves, and they have four options. Visitors are invited to vote, by placing a coin in a slot, which generates a bar graph of their votes.

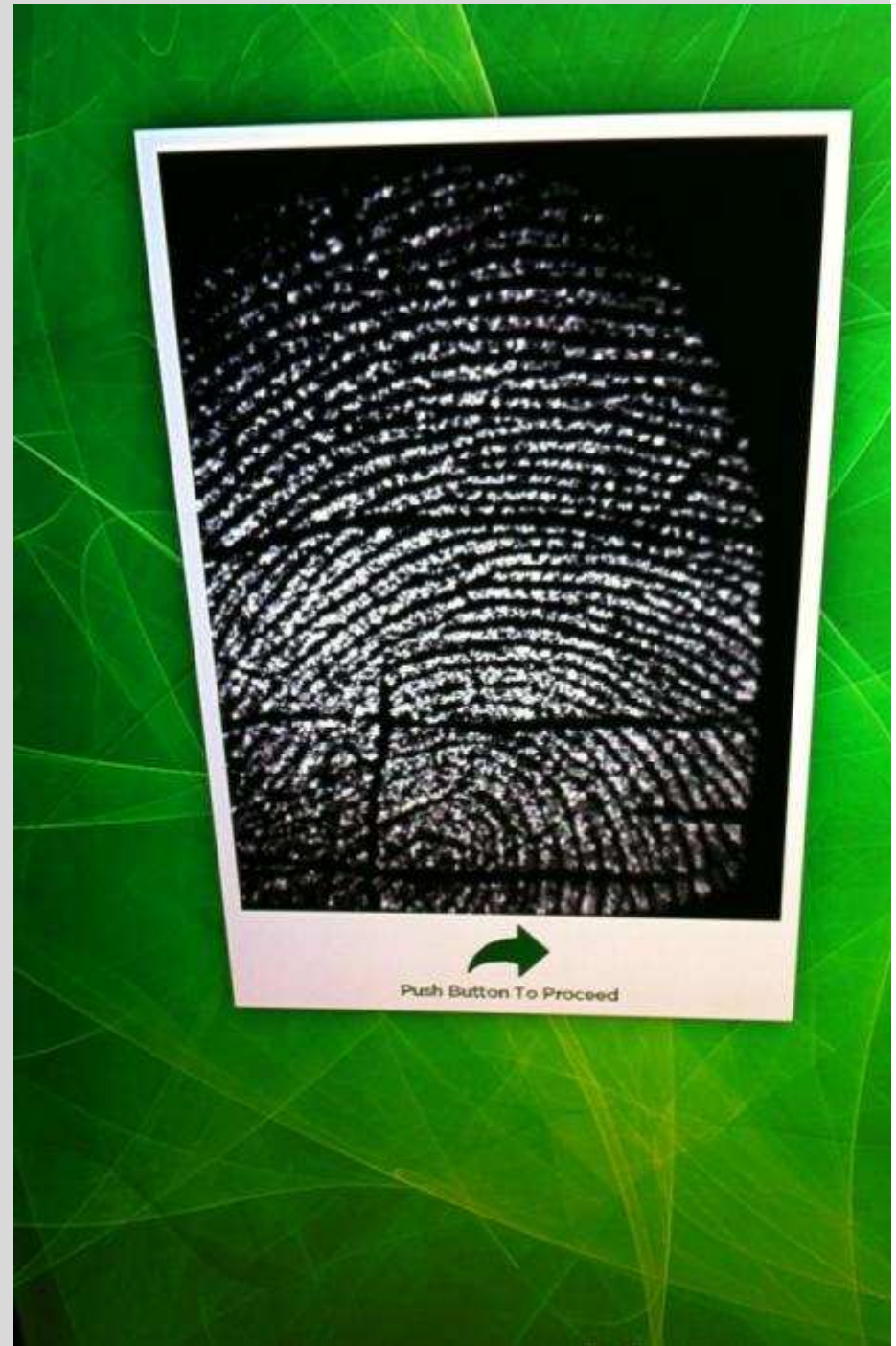


Visitor Participation - See yourself in the exhibition

Throughout the exhibition at SCS they allowed for opportunities where visitors could literally see themselves in the exhibition.

In the image below, from the Genome exhibition, visitors were invited to compare their own DNA to various other organisms. The exhibit allows you to be photographed and positioned you, the human, next to the organism you chose. As you can see below, I share 89% of my genes in common with a mouse. Scary!

The image on the right is of course my finger print, which I saw up on the screen as part of the Uniquely You exhibition. Again, making me physically part of the actual exhibition.



Digital Conversations

SCS had clever ways of presenting information through conversations rather than a single talking head, making it more engaging for the viewer.

In both images, the content being presented is contentious.

The top image is from the Genome exhibition, in which the conversation is about genetic testing and genetic engineering. The conversation is happening between the Mum, Dad, child, medical professional and other professional. The talking heads talk to each other and look at the other speakers etc. It was quite unexpected – as you were invited to push a button for only one of the 'heads'.

The bottom image is taken from the Climate Change exhibition. The conversation is between two people with differing views on climate change. It was one actor playing both roles – which was quite effective.



And the exhibit I could have watched for hours...

The dancing magnets in the Sound exhibition.

Ok... I'm not ashamed to admit it. I may have taken over this exhibit and not let children near it – that's how much I loved it!

The song choices had a definite adult appeal. No Kate Perry. No One Direction. 'Pump Up the Jam', and 'Flight of the bumble bees' are certainly songs of my generation, not today's youth. And let's face it – we adults are the ones who bring children to science museums, either as teachers, carers, parents, grandparents or even aunts and uncles.

This exhibit reminded me to think about our adult visitors, and the importance to have moments specially designed to engage adults – after all we deserve fun too!

Click below to be delighted...

<http://www.youtube.com/watch?v=IKP43IOY32g>

ARTSCIENCE MUSEUM



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ArtScience Museum Singapore

The ArtScience museum, a relatively new museum on the Singaporean cultural scene, is housed in the lotus-inspired building (in the image below), at Marina Bay Sands, Singapore. It was opened in February 2011, and it hosts major international travelling exhibitions from around the world, and holds a small permanent 'artscience' exhibition.

I visited their permanent exhibition, *ArtScience: A Journey Through Creativity*, which 'showcases the power of creativity as it is manifested in the world of ArtScience' (top image).

Their permanent exhibition was rather small, presumably due to a lack of their own collection items to display and interpret. However, what they lack in their own collections, and hence the ability to offer an extensive permanent exhibition, they make up for in offering a diverse range of interesting travelling exhibitions. During my visit they were hosting both Andy Warhol and Titanic exhibitions. With a clever title of 'ArtScience' museum – they have allowed themselves the flexibility to rent and host a wide range of travelling exhibitions, appealing to diverse audiences. This strength could present new competition for the government funded museums of Singapore – from art, history and science museums – in bids for block buster, high visitation, travelling exhibitions.



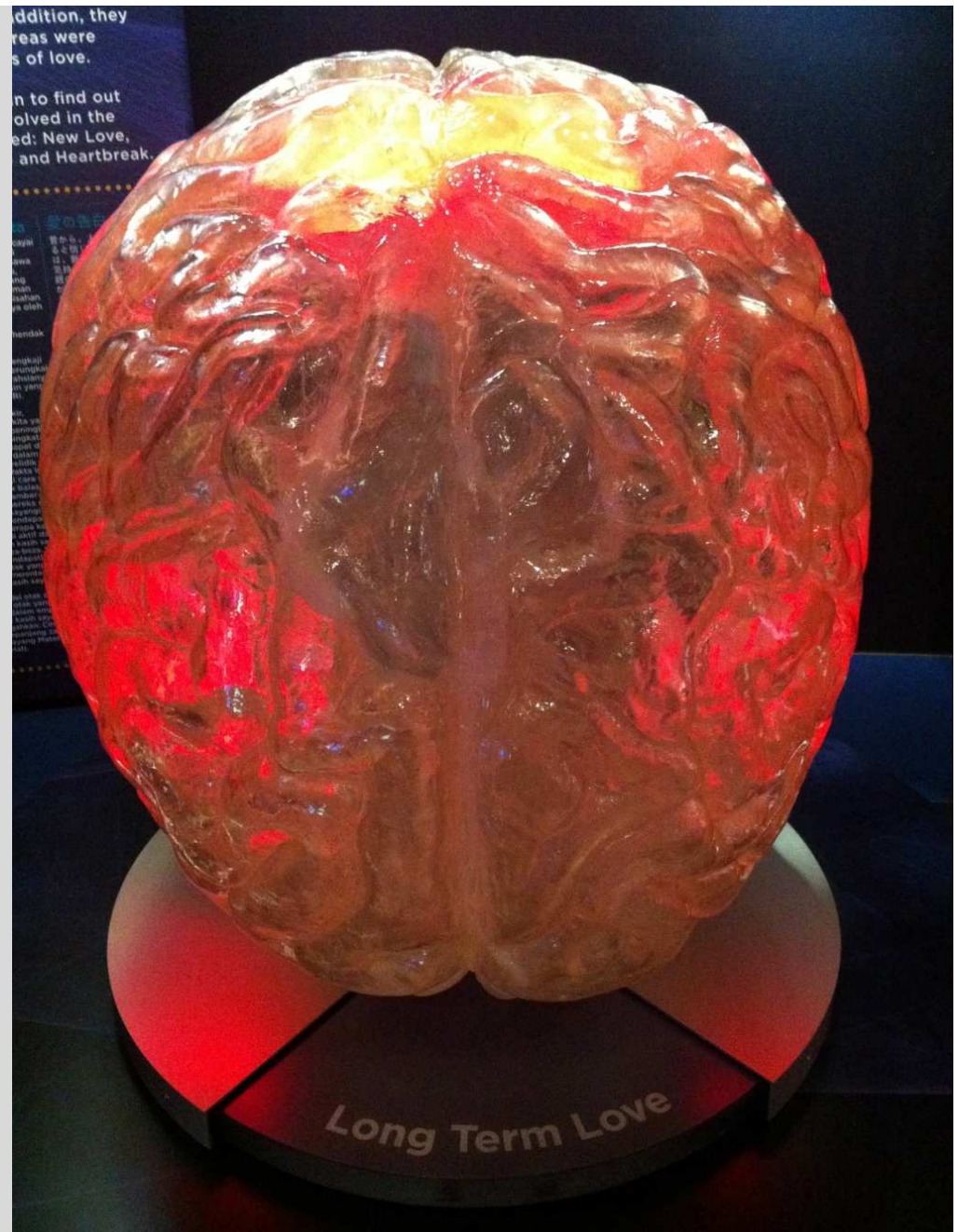
Thanks again ASTEN

Again, I would like to thank ASTEN for this fantastic professional learning opportunity to learn from others in the science museum world.

It was an invaluable experience that no doubt will impact on the way I think about using digital programs in museums and exhibitions which incorporate visitor participation in meaningful ways.

I look forward to continuing relationships that I made while at the Science Centre Singapore.

To find out more about the Science Centre,
Singapore click here:
<http://www.science.edu.sg/Pages/SCBHome.aspx>



A brain in the Uniquely You exhibition at SCS, showing where Long Term love exists in the brain. It is symbolic of my appreciation.



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