

# Honours Studio – Week 06

*Can Experiential Media Engage  
Children with Sensory Disorders?*

Scott Brown

# Research – Temple Grandin



- High-functioning autistic
- Now holds a PhD, is a university professor, publishes books on autism/animal behaviour, speaks at conferences around the world
- Known for groundbreaking work in design and implementation of 'cattle runs' in farms and slaughterhouses
- Rare ability to communicate experiences of autism
- Was non-verbal as a child, and could not cope with physical contact

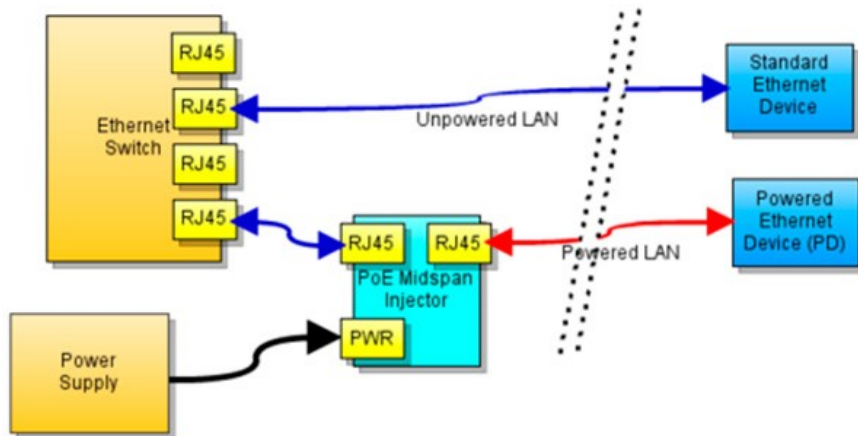
# Research – Temple Grandin



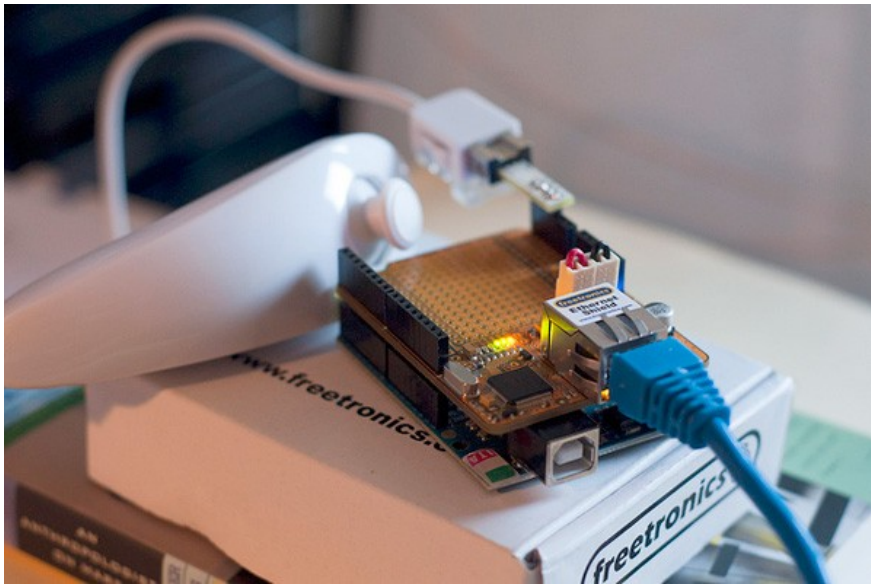
[http://www.ted.com/talks/temple\\_grandin\\_the\\_world\\_needs\\_all\\_kinds\\_of\\_minds.html](http://www.ted.com/talks/temple_grandin_the_world_needs_all_kinds_of_minds.html)

- TED Talk: “*The World Needs All Kinds of Minds*”
- Speaks about her ability to “think in pictures” and movie-like memories from early childhood
- Believes that (higher functioning) autistic children can learn to overcome many problems – as she did from around 16 years old
- Encourages educators to find the “focus” of each child and use that to inspire them in other areas

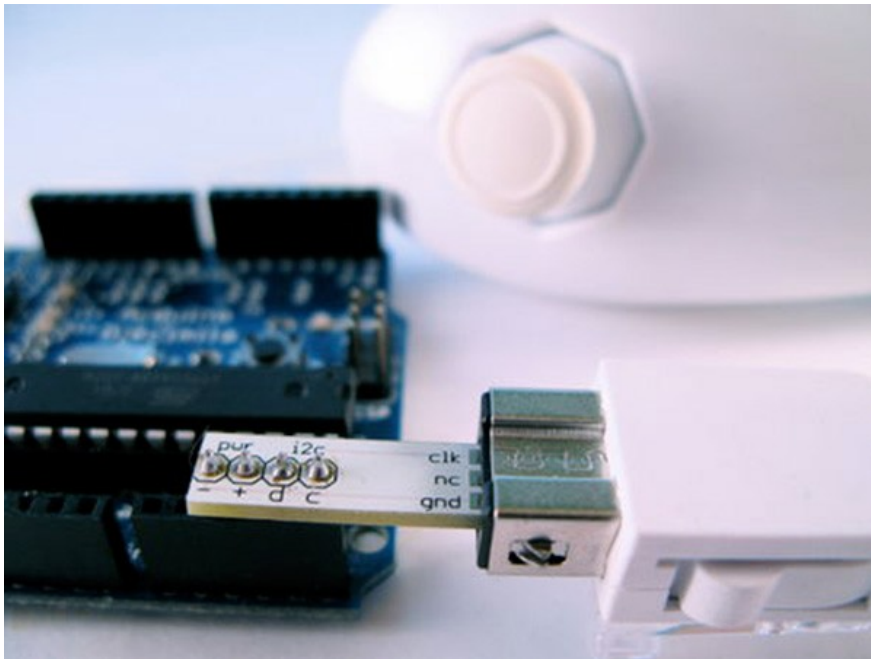
# Research – Electronics



- PoE = Power over Ethernet
- Benefits are twofold:
  - **Safety.** Removes direct connection to high voltage wall socket
  - **Networking.** Communication without expensive wireless module
- Input voltage is limited to 7V-24V
- Disadvantage of still being 'tethered'

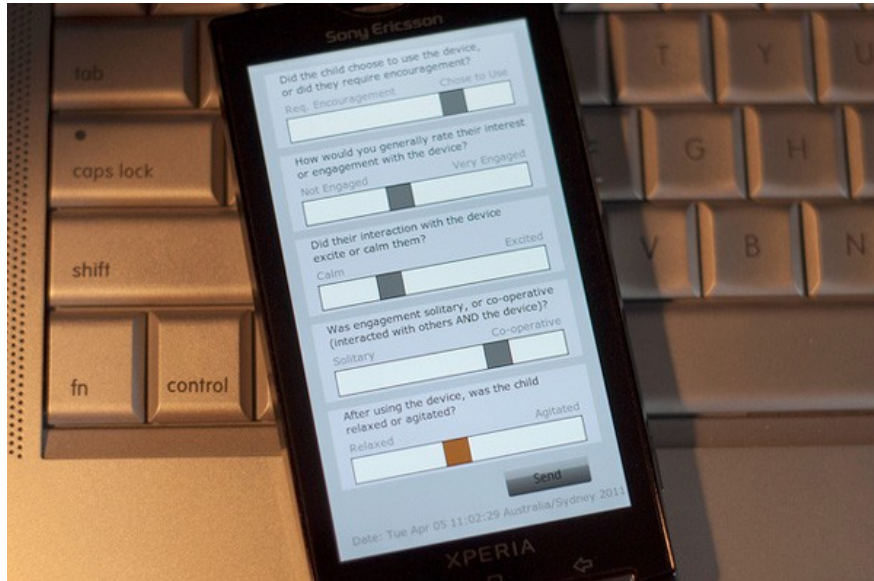


# Research – Electronics



- “WiiChuck” Wii Nunchuck adapter
- Small chip board which plugs directly into Nunchuck/Arduino
- Nunchuck requires less power than Wii Remote and doesn't include many unnecessary functions, eg LEDs
- Will track direction/movement and includes buttons and joystick
- Keeps with concept of reusing (low cost) consumer technology

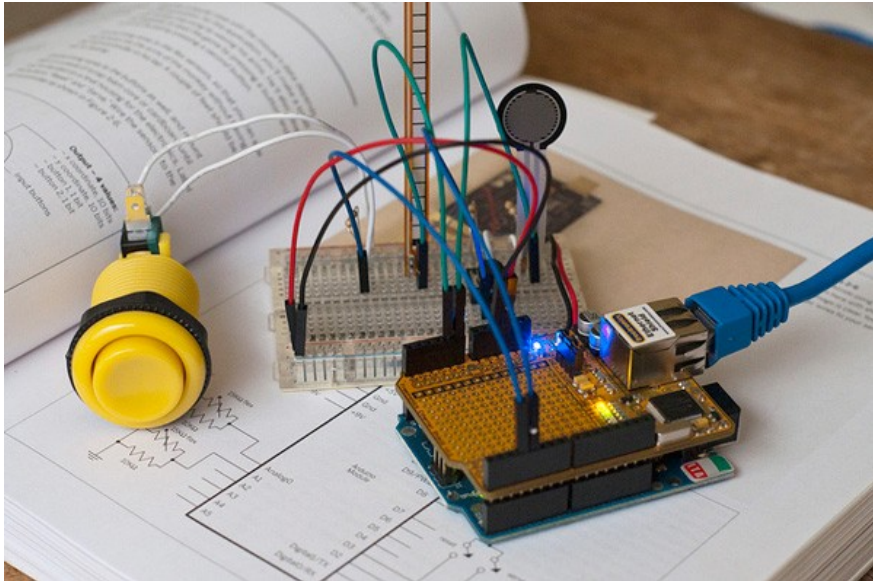
# Research – Android



- Using Android Processing
- Application will function as:
  - **Device Remote.** Can control (switch off, slow down etc) networked device
  - **Questionnaire.** Behavioural analysis can be immediately emailed, rather than using forms
- If parent/carer does not have an Android device, application can be easily developed for desktop use

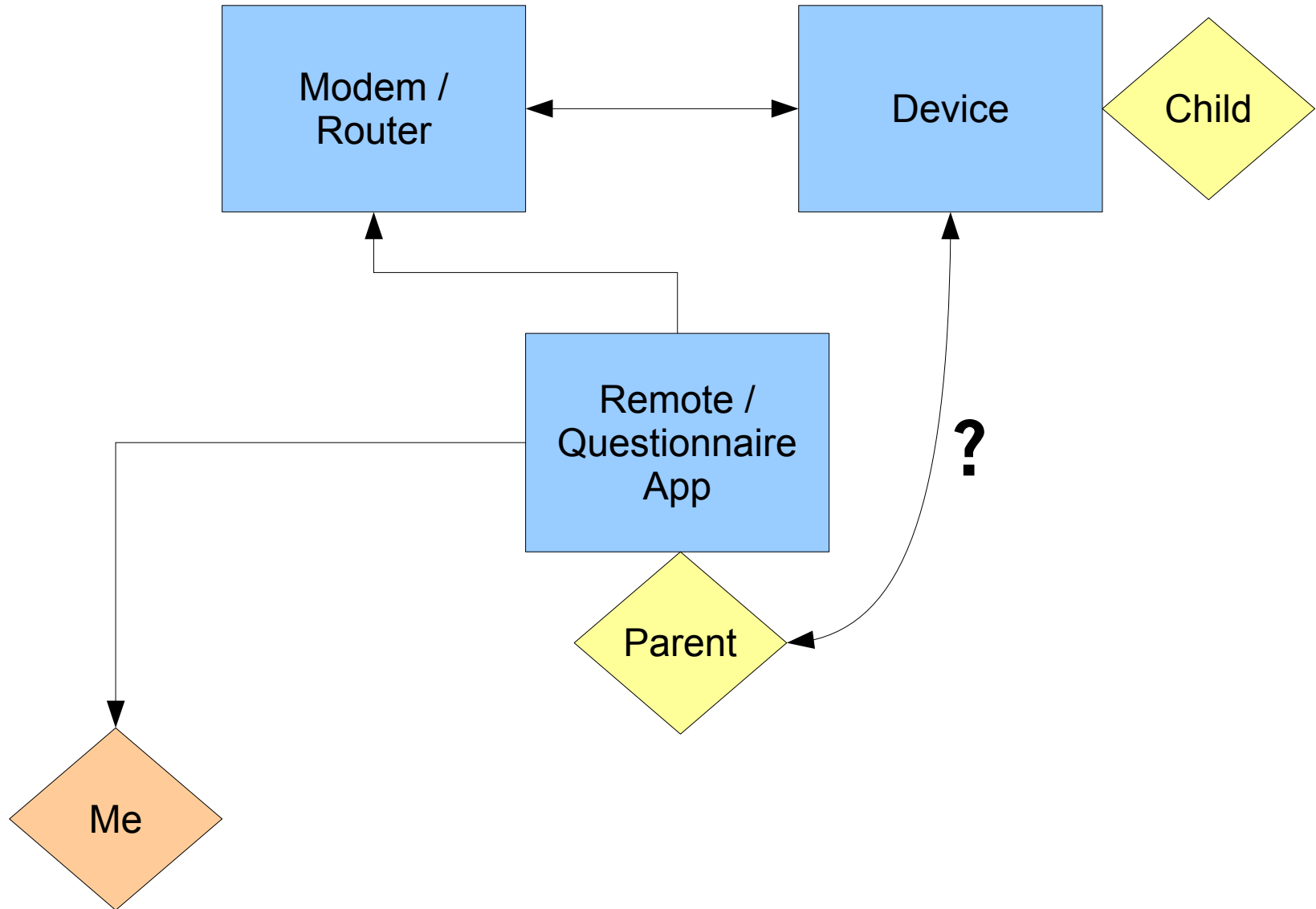


# Research – Networking



- *“Making Things Talk”* by Tom Igoe
- Looking at ways to communicate input sensor data over local network
- Exploring what types of sensors could be used and what feedback may be expected

# Device / Information Flow





# Iterative Process

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**Recursion** is the process of repeating items in  
surfaces of two mirrors are exactly parallel with  
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[Recursion \(computer science\) - Wikip](#)

**Recursion** in computer science is a method w  
[en.wikipedia.org/wiki/Recursion\\_\(computer\\_s](#)

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- Decide on importance of features
- **First Design** (after meeting)
  - Object Form, PoE, Questionnaire
- **Second Design** (after feedback)
  - Object Refined, Remote Control
- **Third Design** (after feedback)
  - Object Refined, Co-operative Interaction

# Ethics Approval - Aspect



1 April 2011

Scott Brown  
6 Pleasant Avenue  
Erskineville  
NSW 2043

Dear Scott

Thank you for submitting your research proposal entitled *Can Experiential Media Engage Children with Sensory Processing Disorders?* to Aspect's Research Approval Committee. The Committee is pleased to approve your proposal.

This approval will remain valid for one year from the date of this letter. Please advise me when your research is completed or discontinued. Aspect requests that you also provide a summary of research results upon completion.

If you wish to contact any of our service managers directly, you may access their details via the Aspect website at [www.autismspectrum.org.au](http://www.autismspectrum.org.au). Please include a copy of this letter with the documents you provide to service managers. Should you require further information to assist with the recruitment process, please contact me at [sbaldwin@autismspectrum.org.au](mailto:sbaldwin@autismspectrum.org.au)

Yours sincerely,

A handwritten signature in cursive script, appearing to read 'sbaldwin'.

Susanna Baldwin  
Research Officer  
Autism Spectrum Australia (Aspect)  
PO Box 770  
Seven Hills NSW 1730

Tel: (02) 8868 8508  
Fax: (02) 9896 5266  
Email: [sbaldwin@autismspectrum.org.au](mailto:sbaldwin@autismspectrum.org.au)

**AWESOME**

- Aspect Research Committee approved
- Application included parental/guardian information and consent form
- Can now source participants

# Sourcing Participants



- Meeting with Aspect Occupational Therapists to discuss
- OT's already have suggestions
- Will need parental / guardian consent **before** applying for UNSW ethics approval
- Hope to work with under-stimulated, rather than over-stimulated children

# Measuring Success



- Comparison of **engagement** with interactive vs non-interactive objects
- Does child engage with device for measurably longer than other objects
- Is it possible to create co-operative engagement, ie between child, device **and** parent/carer?