ANZAGG 3D Meeting Agenda

17 May 2023

# 1. Roll call with self-introductions

Meeting chaired by Leona Holloway, Monash University

15 people in attendance from Monash University, LMU Munich, NSW Department of Education, Victorian Department of Education, BLENNZ, Vision Australia, NNELS, APH, SASSVI, Sonokids

# 2. Icebreaker: What have you been designing/printing in the last month?

success story! A teacher came in asking about accessible maths resources for a grade 3 student. they were shown the catalogue using those search terms and the teacher was excited to find and select a large number of models that could be loaned or printed to support the student for the next few years.

Trying to find money for a printer. One member recommended the Bambu printer, which is closed off. It can be used independently as a blind person. Another attendee recommended FormLabs because it is more reliable than FDM printer. A third person recommended getting a printer with a local supplier so that they can help with installation, training and support.

# 3. Guest speakers: Florian Lang and Verena Pues

Florian Lang and Verena Pues from LMU Munich recently presented their “BrailleBuddy” project at the CHI conference. BrailleBuddy is a tangible user interface supporting children with visual impairments in learning Braille. It was created using 3D printing, laser cutting and low-cost electronics. They evaluated BrailleBuddy in a user study with children with blindness and found that BrailleBuddy provides intrinsic motivation for learning Braille and can be used by children without supervision. An open-source toolkit is provided to enable educators and researchers to support individual requirements.

The full paper is available at <https://dl.acm.org/doi/10.1145/3544548.3580844> and all of the files and instructions for its creation are on github at <https://github.com/FlorianLa/BrailleBuddy>.

A member asked whether braille buddy could be used to play a 2D – 3D matching game. We don’t have anything like that currently, and it is interesting that some students could recognise the 3D but not 2D or vice versa. Florian said not currently, but they are looking at whether they could adjust the lids for different games.

They are now experimenting with using a clear lid, QR codes on the base of the tiles, and a smartphone inside the box.

A member asked about the language and platform. It currently only speaks German and is on Android. They would like to extend to iPhone. The files on github are marked up to highlight what needs to be changed for English language.

A member who has worked in classrooms with students for 20 years supported the inclusion of the braille word under the image for young children.

A member asked why they had included separate tiles with capital letters, which make the task of finding the right tile more difficult. This is because in German every noun is written with a capital letter.

Florian invited everyone to check out the paper and github site. You are free to use the project for non-commercial purposes.

# 4. Q&A for new members

Florian asked whether people are creating commercial products.

* the education departments are making models requested by teachers, for use by blind students in the classroom. They make their models available on Thingiverse.
* Monash University is likewise sharing their models for free. The only commercial product she can think of is the tactile rulers by Visio – they used 3D printing to prototype the rulers but then had a large quantity produced using injection moulding and had some extras available for sale.
* Leona encouraged sharing on <https://tactiles.eu> because the site has been designed specifically so that there is enough information about how to print and finish the models for touch readers, and there are good mechanisms for collaboration.
* Recommended sites for finding 3D models for touch readers are given on the ANZAGG website at <https://printdisability.org/about-us/accessible-graphics/3d-printing/repositories/>

A new member asked whether most people are making 3D objects or translations of diagrams from textbooks.

* One organisation is making tools, 3D models and models to explain curriculum concepts
* Another organisation is making a lot of models for textbook diagrams that are too difficult to produce as a tactile graphic, such as the World War I trenches. They are also creating materials for braille book bags.
* A third organisation is being asked for a lot more tactile games. For university students they are being asked to produced diagrams that are too difficult as a tactile graphics, such as advanced biology
* A fourth organisation’s approach is driven by teachers to tell them where the gaps are in the current resources. They are also working with curriculum to get ahead of what might be needed ahead, for example the creation of book bags to support early literacy.
* interaction (e.g. moveable parts) is another reason to use 3D printing rather than tactile graphics.

# 5. Other business

## 5.1 ANZAGG guidelines on designing 3D prints

Leona is still working on the following sections of the ANZAGG guidelines for 3D printing:

* Writing up the last section on 3D design for touch readers
* [Repositories](https://printdisability.org/about-us/accessible-graphics/3d-printing/repositories/) section updated
* Section on [3D printing BY people who are blind or have low vision](https://printdisability.org/about-us/accessible-graphics/3d-printing/blvmakers/) also to be updated

# 6. Next Meeting

Update: The next meeting will be moved to Wednesday 28 June, when Ruth Nagassa will be presenting on audio labelling options for 3D printed models.