**Banyule Tech School – 2020 Interactive Projection System**

Little Projector Company has been commissioned by Banyule Nillumbik Tech School to design and deliver an interactive projection system with Raspberry Pi, motion sensor and audio-reactive capabilities. Little Projector Company will provide a Resolume template, workshops and ongoing phone and email support.

ICT to provide installation of all equipment, Raspberry Pi programming and ongoing Raspberry Pi support.

**Project Goals:**

1. Install a permanent and interactive projection system in the gallery space
2. Ensure the projector is connected to a Raspberry Pi and a PC at all times. The PC is to be loaded with Resolume and sit within the gallery space to allow for importing of media and projection mapping
3. Ensure the system is equipped with a motion sensor and has audio-reactive capabilities
4. Ensure that Banyule Tech School staff a trained in preparing media, basic projection mapping and Resolume skills

**Project Outcomes:**

1. Showcase the potential of projection technology
2. Provide students with the opportunity to learn and practice projection mapping
3. Provide a platform for students to exhibit still and moving image works using projection technology
4. Have an 'always on’ demo mode that is triggered by a motion sensor. The motion sensor will switch between two different demo modes

**Potential Scenarios:**

1. *Motion sensor:* visitor walks into gallery space to see ‘student work A’ projected directly onto gallery floor. Visitor steps onto ‘Sign X’, positioned 1.5m away from the ceiling-mounted projector. Motion sensor triggers projector to show ‘student work B’, projection-mapped onto table-based object. ‘Student work B’ plays continuously for 2 minutes then returns to ‘student work A’, projected directly onto gallery floor.

*Process:*

1. Staff member transcodes student work into DVX format using Resolume Alley on ‘Studio PC’ and copies DXV file onto USB flash.
2. Staff member uses remote control to turn on projector in gallery space.
3. Staff member plugs USB flash into ‘Gallery PC’ USB slot and opens Resoulme Arena.
4. Using wireless keyboard with trackpad, staff member drags ‘DXV file A’ onto Clip 1 (Layer 2, Column 1) and ‘DXV file B’ onto Clip 2 (Layer 1, Column 1)
5. Staff member clicks on ‘Clip 1’ and ‘DXV file A’ begins to play projection directly onto gallery floor.
6. Staff member walks onto ‘sign X’, triggering the motion sensor to play ‘DXV file B’ - mapped onto ‘table-based’ object.
7. *Audio-reactivity:* student wants to see a still or video image work react to sound.

*Process:*

1. Using wireless keyboard with trackpad, staff member clicks on ‘Clip 1’ in Resolume and ‘DXV file A’ begins to play – projection-mapped directly onto gallery floor.
2. Staff member clicks on drop-down arrow on a ‘Clip 1’ parameter (e.g. Rotation X) and selects ‘External FFT’. This process can be repeated on any number of FX or parameters.
3. Staff member claps hands near microphone to test audio-reactivity and adjusts ‘gain’ and ‘fall’ controls accordingly.
4. Staff member plays music near microphone (from external source e.g. Bluetooth speaker) to see projected image react to music.