Portland College: Building a technology-rich multi-sensory room on a budget

Summary

Portland College wanted to develop a new multi-sensory room for its learners with learning difficulties to engage them in their education and therapy. The budget to achieve this was only £5k, so innovative methods were employed. A classroom was refurbished with four projectors linked to a computer and DVD player, which controls the sound through portable speakers. This relatively cheap method has created a blank canvas that teaching staff and therapists are actively using to engage learners through visuals (images and film) and sound.

About Portland College

Portland College is a vibrant national college for people with a wide range of disabilities providing first-class education and vocational training for up to 300 students aged 16 and upwards.

It strives to develop every learner’s potential with a personalised programme that can include work experience and volunteering. The personal curriculum is underpinned by a broad range of accredited qualifications in independence, literacy, numeracy, sport, arts, business studies, computing, small animal care and horticulture. It delivers a specialised sensory curriculum for learners with more complex needs.

The challenge

Portland College has a long history of using technology to engage its learners. It was interested in how to create a different type of sensory room for its learners; one that relied heavily on the use of technology. It wanted to do this to enable its learners to achieve units against their courses for both education and therapy aims.

Adam Jefferies, Assistive Adaptive Technologist at the College, had been given a tour of a sensory room of a local school which gave some inspiration for the kind of thing that the College was looking for. However there was one major problem - the cost of the equipment used was much more than the budget available. That particular set-up was designed for arts (music/theatre) usage and comprised hi-tech equipment that easily cost a five-figure sum.
The challenge for Portland College was how to create a new multi-sensory room on a tight budget of £5k.

**The activity**

The one idea that Adam felt able to re-use was the implementation of four ceiling-mounted projectors that beamed images on to the whole (or a large part) of the four walls in a room.

A mock-up of the projectors was trialled to see if it would have the desired effect. This mobile version was used a few times with learners and the format was deemed viable.

A classroom in the College then became available and all the furniture and trimmings were removed. A small partition wall, with an access door, was built to house the main computer and operating desk. Black-out blinds were placed across the windows. The projectors were then mounted on to the ceiling and portable speakers placed around the room on the floor (with cables hidden).

![Image of multi-sensory room]

Full **hardware** technical specification:
- A touch-screen computer;
- 4 High Definition (HD) projectors;
- A 4-switch KVM to divide up the signal from the computer to the 4 projectors;
- A 600W DVD player (rather than an amplifier);
- A dozen portable speakers;
- VGA/USB adaptor to give flexibility of input into the projectors.
Some basic free software was installed on to the touchscreen computer to display presentations and audio/video content. Adam then installed an all-in-one package for communication and access, The Grid 2, for a one-off £500 fee. This allows people with limited or unclear speech to use a computer as a voice output communication aid, using symbols or text to build sentences.

The built-in computer control features also allow access to the Windows desktop and other programs. The Grid 2 is accessible to all learners, accepting input from various options including eye gaze, switches, headpointer, touchscreen and mouse.

In total the new sensory room, the White Room, was created on a budget of £4,200.

**The outcomes**

One potential worry was that the projectors would overheat due to extensive use and bulbs would be a problem, but after six months this has not been the case. Approximately once a month the projectors need a slight re-focus as the heat fractionally interferes with the projection.

The room was designed to be a blank canvas, with a minimal amount of objects that permanently stay in the room. Instead the College has been building up a bank of options that can be used by the lecturer or therapist on a lesson by lesson basis.

The College has been experimenting to see what items can be used with the learners to stimulate them. Some of the best examples of items have been:

- Lamps (light)
- Fans (wind)
- Radio/CD player (sound)

The room has been extensively used by Speech and Language Therapists (SLTs) and teaching staff. Adam gives each staff member an induction and then is on hand for the first two or three sessions whilst they get comfortable. After that the staff member runs the session without support.
The sound and images/film are used to stimulate and engage learners with a wide range of different learning difficulties. Examples of how the room has been used include:

- Learners use switches to select answers from visual presentations – which can also be filmed as evidence for assessment purposes;
- Autistic learners talking about pictures that they have taken and listening to each other to help with group dynamics;
- A few visually-impaired learners use the room as a giant screen;
- Gradually building tolerance levels of noise and surrounding activity to mimic real-world scenarios;
- One unexpected outcome was the projectors were used with just a beam of light (no image) and staff and learners then manually created shadows, which demonstrated cause and effect;
- Individual stimuli for learners can be created so that each learner gets something that engages them.

The impact

The biggest impact has been in terms of learner engagement. The learners really like their time in the White Room and many show distinctly more involvement than in their other activities.

Martin Cooke, Advisor at the Jisc Regional Support Centre for the East Midlands has been impressed by what has been achieved with the White Room:
“This is a great example of how to create a basic multi-sensory room without the need for expensive commercial installations. Portland has recently extended its intake with a number of students with ASD/autism: the multisensory room is ideal for these.

“The room is easily adaptable for various cognitive or sensory experiences. Staff who are using technology can easily adapt software and applications to this environment.”

The lessons learned

To improve the room these additions were made:

- To stop light getting in to the room some self-made large wooden hinged strips were added to the walls next to the blinds;
- The room was painted all white to aid visibility of the projection.

Adam offers these tips for others wanting to re-create the Portland White Room:

- “Have standard videos that you play for the beginning and end of each session as this helps identify to learners that they are in the White Room;
- “Our room is slightly rectangular, which means that the projections don’t go right up to the edge of some walls, so a square room is preferable;
- “Have flat walls if possible and remove/remodel cabling and coving to minimise disruptions to the display;
- “Use the Grid 2 software, as this is fantastic software for a small outlay.”

In the future the College is looking to expand on how it uses the room. Ideas currently under consideration are:

- Improving the technical set-up so that the four projectors run independently and give greater flexibility, thereby allowing more learning opportunities:
  - by power source - so that different combinations are on, e.g. just projector numbers 1 and 3;
  - by input source – so that different content can be displayed on different projectors/walls;
- Incorporating additional technology to turn the walls into Interactive White Boards (IWBs);
- Simulating social situations (e.g. train/bus station) by recording at outside venues and bringing some props into the room;
- Using gaming devices (e.g. Xbox);
- Purchasing multimedia content to give more options;
- Implementing a wireless VGA pick-up so that there is no physical connection to the computer and staff and learners can use their own devices (BYOD).
Useful links

The Grid 2
Portland College website
Jisc Regional Support Centre website
Accessibility and Inclusion Forum for the East Midlands

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