# COMPUTING
# CLASSROOM DISPLAYS

A space for inspiration or a drain on teachers' time? **Alan O'Donohoe**
shares ideas for displays that you and your students will love

**A** privilege of my role as an educational consultant is that it regularly affords me opportunities to visit classrooms in primary and secondary schools. This has allowed me to see many different approaches to classroom displays and observe a range of approaches in action.

While the research on the links between classroom displays and learning are few and varied in their findings, there are several arguments for investing time into creating effective displays:

- **Enjoyment** – Some teachers claim to derive a great sense of fulfilment and joy from creating classroom displays. That may also be perceived as a welcome distraction from marking books and other mundane aspects of the role. This may contribute to a more positive sense of well-being.


■ A cabinet displaying retro games consoles

- **Exhibits of enthusiasm** – They may also be used by teachers who are incredibly passionate about computing education to practically demonstrate their love of the subject to their classes, and hope in turn that some of the same enthusiasm rubs off onto their pupils. These teachers want to be proud of their classroom and they want to show that.
- **Environmental improvement** – Bright, busy, highly decorated environments might lead learners to feel inspired, motivated, and welcomed.
- **School culture** – In your school, there may be long-held traditions and expectations that all staff regularly refresh their wall displays as part of their professional duty.

There are some arguments to the contrary, however, suggesting we avoid classroom displays altogether. These include:

- **Workload** – The National Workload Agreement in 2003 listed "Preparing, setting up, and taking down classroom displays" as an admin task that should not be expected of teachers. This is not to say that teachers cannot plan and prepare classroom displays, but that they should not be expected to.
- **Procrastination** – It can be argued that creating wall displays is a wasteful distraction for teachers, as there are far more important activities that they should be working on than merely making their classrooms look more presentable.
- **Distractions** – It's difficult to find any proof that classroom displays contribute to improvements in learning, and evidence suggests that highly decorated classrooms can be detrimental to learning, particularly for autistic pupils. Perhaps we shouldn't be rushing to clutter our classroom walls with unnecessary decorations all vying for the short attention spans of our learners, and instead aim to keep the classroom environment more business-like and tidy. Displays can quickly deteriorate and make a room look shabby or tired.
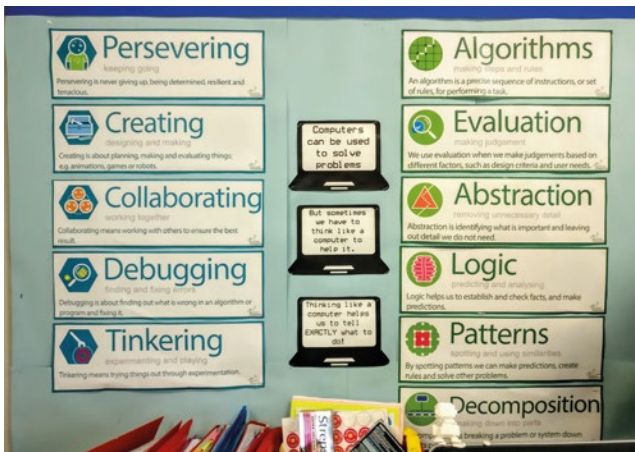
■ Computing vocabulary from CAS Barefoot

### Displays to inspire

Here are some ideas that I've seen when visiting schools – most are suited to the traditional 8 x 4 ft fibreboard display boards found in many UK classrooms. Why not experiment with a few of these and discover which ones you feel add the most value to your classroom and teaching style?

**Display competition -** One year, I invited some of my students to put forward design proposals for an engaging classroom display on a range of themes I suggested. I selected three winning entries and offered them the opportunity to create the display using a range of materials available to them. We invited the education reporter from the local paper to interview the winning students about their designs, and the students were thrilled to see themselves and their work feature in the paper.

> " STUDENTS WERE THRILLED TO SEE THEMSELVES AND THEIR WORK FEATURE IN THE PAPER

**Focus -** You could use a display as part of a strategy to raise the profile of an important or emerging issue, e.g. the contributions of women to computing, diversity in STEM, cybersecurity threats, or careers in computing.

**Expectations and habits -** Displays provide an opportunity to remind your students of your expectations for behaviour, or ways they should work. For example, you could design a display that highlights good programming habits such as 'try to first identify what the problem is you're trying to solve', or you could highlight the characteristics of effective drivers and navigators in pair programming.

**Gallery -** You could showcase the best examples of pupil work, to award achievements throughout the year, 'work of the week', or to celebrate your 'Class Computing Champions'. This can be built up ▶

## PRACTICAL TIPS

■ **Seek inspiration** - Before you start on your display project, use photo sharing communities, like Pinterest, to help provide you with some inspiration. Some teachers have shared their displays on Twitter and Facebook to support others. You might consider sharing yours afterwards.

■ **Interactivity** - To seek deeper engagement with a display, seek ways to interact with the viewer. This might include a series of questions with the correct answers hidden below, or you could even follow the examples of teachers like Rebecca Lofthouse, Matt Moore, and Allen Tsui who have designed Raspberry Pi and micro:bit-controlled wall displays to interact with.

■ **To laminate or not?** - If you are already taking steps to reduce your consumption of single-use plastics, rather than laminating everything in sight you might choose to be more selective about what you choose to laminate. This could be used to protect some components of a display, or to add a 'dry-wipe' functionality so that some of the content can be easily updated and refreshed as required.

■ **Protective coverings** - Wall displays on corridors, supervision 'blind spots', or other areas of high traffic are likely to deteriorate rapidly due to wear and tear. Heavy-duty rolls of film are available that cover the whole display and do a fantastic job of protecting displays from idle hands. While costs of these products vary, protecting an entire display board amounts to about £5.


■ Nicola Looker has decorated her classroom door

# DISPLAY TIPS FROM TEACHERS

"Avoid displays that are simply 'wallpaper', that are only there to fill a space. Displays should be thought-provoking and allow teachers to make reference to them with appropriate questions."
- *Mike Goobric, Teacher*

"I believe good wall displays help to make an interesting, creative, and stimulating learning environment for pupils to thrive in. Displays should be informative and engaging, inviting pupils to interact with them, providing support and inspiration when they need it. They can be used to support language development, and challenge pupils to choose technical language to 'level up' their work. Also, as a teacher, it can support your teaching through covering key concepts, answering questions you are asked repeatedly, and a resource to encourage independence in your classroom"
- *Nikie Arthurs, Computing Teacher*

> into quite an achievement for a pupil to have their work featured in the gallery that week, and you could send a message home to the parents of these pupils as part of the recognition.

**WAGOLL wall -** Quite different from the Gallery, this display is used to highlight 'What A Good One Looks Like'. This way, pupils working on a current piece of work that may be unfamiliar can benefit from annotated examples and snapshot views previously prepared by the teacher.

**Resource bank -** These displays share information sources likely to support pupils in independent learning activities. These often make use of posters available from organisations and suppliers and may include things like posters on computational thinking, Python cheat sheets, and examples of Scratch programs. You could encourage pupils to seek information here first rather than asking the teacher.

**Big picture -** I've used these when pupils have been working on projects with lengthy timescales, to help them see the learning journey, marking out milestones and potential obstacles. In one example where a class were creating a podcast episode, I used a display to help them relate their current position on the project to the end point of the project. I've found that without an oversight of longer projects, pupils can become confused, leading to lower motivation, lack of direction, and a loss of purpose.

**Vocabulary -** A long list of technical words related to computing, highlighted in different colours, may not make for the most inspiring or imaginative classroom display ever seen. However, it may just prove to be the most useful one. I've tried to keep the number of words visible at any one time to twelve or less, but having the words laminated separately with hook-and-loop tape on the back enabled me to use these for rapid assessments, quizzes, plenaries, lesson starters. Remove three from the wall display before the class arrives and the students can try to guess which words are missing as they enter the room.

**Progress chart -** Personally, I've preferred to maintain electronic progress charts hosted online so that I can update them when and


A computing timeline

# CURATE A GALLERY OF HIGH-QUALITY PHOTOGRAPHS OF STUDENTS WORKING IN YOUR CLASSROOM



where I want. Each lesson, the pupils I taught would pester me to display the progress chart and update their positions, I found it a massive motivator for all pupils. Some of my colleagues preferred to have paper versions of these permanently visible in the classroom. I would advocate that these charts only ever displayed how far students were along a trajectory of completing a project and never grades or assessment scores – these can have a demotivating effect.

**Wonder wall -** This type of display can be used to arouse interest and curiosity in a particular topic of computing. Some teachers have used these to display internal components from computers, game consoles, tablet devices, and mobile phones and they often include prompts and questions for students to try to answer, e.g. 'Where might the CPU be?', 'How many input devices can you identify?'

Aside from the traditional display boards, there are other ways you could decorate your classroom to support and celebrate students:

**Photos -** Curate a gallery of high-quality photographs of students working in your classroom, the sort you might expect to find in a school marketing brochure. If you, or someone in your school community, has an interest in photography, over time you can build up a high-quality collection for the purpose.

■ Research has shown that making more students feel welcome in classrooms would help recruit more girls into computer science

**Artefacts -** Teachers Kay Sawbridge and David Bate have created their own mini 'Computing Museums' using display cabinets. If you appeal to your community through the school for donations or loans to the 'Computing Museum', you'll be amazed at some of the things that people have held onto, e.g. vintage computer game consoles. To seek wider engagement, you could ask staff to write captions about their own recollections of the devices, and turn it into a quiz where students have to match the memory with the staff member. Ensure you risk-assess the use of these artefacts in the classroom.

**A working wall -** These are becoming popular in schools as an alternative to wall displays, and might be seen as an extension to your whiteboard. Teacher Esther Devonport often prints children's work and annotates them with key features. Depending on levels of trust and how much space you have available, it may be that some areas are reserved for pupils during group work. A spray bottle of tap water and some cloths help keep your working walls pristine.

**No displays -** Perhaps a controversial approach, but you could request that all display boards are removed to keep walls free of clutter. This will require a certain amount of bravery, as you leave yourself open to criticism from others when you challenge the status quo.

Alan's gallery of classroom displays is available at **helloworld.cc/displaygallery**. If you'd like to add yours, email **alan@exa.foundation**. (HW)

## ALAN O'DONOHOE

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