

School Audiovisual e-Book

CLASSROOM SYSTEM UPGRADES MADE EASY



5 Questions to ask when upgrading your school audiovisual equipment





Introduction

So you're sick of replacing projector lamps, cleaning filters and putting up with an image you and your students can hardly see.

Your old classroom projector is dying and you're wondering what to replace it with.

You're frustrated with the tracking or calibration on your interactive whiteboard.

What do you do? Do you simply replace the projector, upgrade to a wall mounted unit, or maybe even an interactive model?

Oh, but hang on...

* Shouldn't we be using TV's now?

* Isn't everything wireless these days?

What I can tell you, is that there are four main types of systems being used in schools and, like everything else, each system has its pros and cons. To help you decide, I've come up with five questions you should ask yourself and your AV supplier before you upgrade the audiovisual equipment for your school.



Question1:

What type of classroom is it?

If you're looking to upgrade a specialty room such as a drama, media or art room then your needs may be different to an English, Science or HASS classroom. A specialty room may require a totally different audiovisual set up and installation.

For example, a specialty room may require a larger image display than a MESH classroom. It may also require an improved audio system, possibly even a surround sound installation for the playback of digital audio.

The room layout may also play a part in the type of display chosen. Windows, walls, bulkheads and partitions may impact or even limit the types of systems suitable due to mounting positions available for the AV equipment, as well as ambient light levels within the room.

Things to consider:

1. Image size required for the room size and classroom type
2. If audio is required what type of system is needed?
3. Room layout - are we limited by this and have we considered a mobile solution?





Question 2:

What display should I use -
Projector or LED Panel?



This is undoubtedly the most commonly asked question I get asked by schools, and it is a very important question indeed. Considering the school is making a medium to long term decision when upgrading this technology (3-5 years typically) the decision to go for the traditional projected solution or to move to LED display (or TV) should be carefully considered.

A projector will give you the lowest cost entry for a classroom display, and whilst not offering the best resolution, it will provide you with the largest image at the lowest price.

If a whiteboard already exists in the classroom then this surface can be used for the image display. In this instance an extreme short throw projector can be installed on the wall directly above the board. As this projector sits very close to the board, shadowing and glare is minimized. This type of projector can produce an image up to around 100" which is certainly large enough for most classrooms.

As long as the school understands the need for the ongoing maintenance associated with projectors, and the image quality is sufficient, projectors can still provide a high level result for some classrooms.



Question 2: Continued

A LED Display Panel will give you the best and brightest image quality available today. For classrooms where a high resolution or image quality is preferred over size then an LED display will be a superior solution. Due to the back lit nature of LED display, they are less affected by ambient light so are also recommended for rooms with large windows letting in natural light.

Perhaps the best thing about LED displays in the classroom is their reliability and ease of use. As they are a single device, essentially an all in one solution, things rarely go wrong. There are no separate speakers to worry about, no projector needing new lamps or filters and there is no need to re-focus or calibrate...ever!

There are literally no ongoing costs for the school and, therefore, the higher price of implementation is offset by no maintenance costs ever for the life of the panel.

Warranty on LED panels can be as high as 5 years with some offering on site replacement or swap over in the unlikely event of breakdown.

The result is greatly reduced waiting time for the teacher and students, without the need to get things fixed. If you've ever had to take a projector to the service agent, wait for the repair, return to collect and then have it reinstalled, focused, calibrated etc.. etc.. then you know what I'm talking about.

Things to Consider:

1. Ongoing maintenance
2. Image and picture quality
3. Ambient light levels of the room





Question 3:

Should it Be Interactive or Display Unit?

Not every classroom needs an interactive solution, but most would benefit from having one. Other than some specialty rooms such as media or art rooms that may benefit from a different solution, (see the 4 main types of classroom systems available on page 12), most standard classrooms would definitely gain from a good interactive display.

The latest in classroom technology has come a long way since the first wave of interactive whiteboards and include functions that most students already understand and even expect due to their exposure to other touch devices. Whilst the latest interactive solutions are very easy to use, training on the hardware and software should follow the installation and should be backed up by ongoing support for the school.

There are 2 choices when it comes to interactive classroom display:

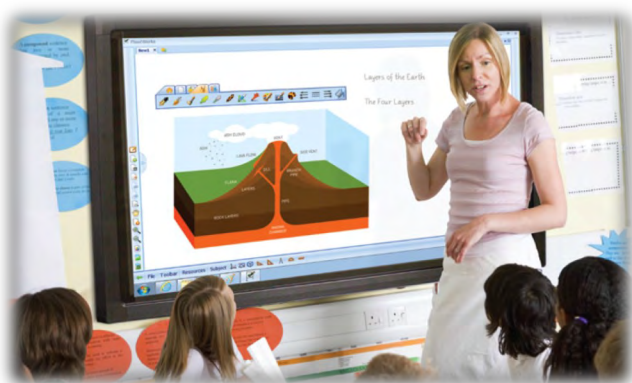
Interactive Projectors:

No longer is both a projector and an interactive whiteboard necessary. The latest in this technology means that the interactive function is built into the projector and a standard porcelain steel whiteboard can be used to touch and annotate. The most commonly used models now offer everything from dual pen, through to dual pen and dual finger touch.





Question 3: Continued



Interactive LED Panel:

Offering the best in classroom interactive display, this is a high resolution, high brightness, touch screen display with up to 20 points of touch.

If it is determined that an interactive LED panel is the best solution for your classrooms then it definitely pays to look at the available offerings and compare the features built in and available for that brand. Many will simply offer display and annotation ability within a software application running on the classroom computer. However, more superior brands will offer everything from built in windows based PC's, built in Android based PC's, native annotation with or without software applications running as well as complete software suites full of resources and teachers aids, student collaboration app's and more. Some even offer built in wireless functionality that allows your student and teacher devices to display wirelessly from anywhere in the room. Yes, they have come a long way since the first wave of interactive whiteboards hit our schools.

Things to consider:

1. Teaching style or curriculum to be delivered
2. Built in features of the board/system
3. Software, Training & Back Up Support from your audiovisual system supplier



Question 4:

What Do I Need to Connect and Where?

This is often an overlooked area during the procurement process but it is important to ascertain what inputs are required for connection to any new display and where the inputs should be installed.

Most classrooms already have a computer for displaying content on whatever board or screen is currently in use. This computer will have a video output cable that is required to connect to the display (projector or LED) as well as a USB cable for connection of interactive displays.

It is important to ascertain what inputs are required for connection to any new display to be implemented. Generally, older computers will have a VGA type connection and newer computers an HDMI connection. However, some will have variations such as DVI-A or DVI-D. Now don't worry too much if you don't understand the lingo, you don't need, that's a job for your audiovisual supplier.

Talk to your audiovisual supplier about this before your installation. Also talk about where are these inputs to be located. The most common location is right beside the display.

This may be because its the easiest place for the installer or because that's where the classroom PC is or where the teacher wishes to connect. When discussing this make sure you think about not only the classroom PC or laptop, but also about other accessories that you may want integrated.



Question 4: Continued



I'm talking about things like document cameras allowing for 3D image capture, wireless receivers for presentation, recording cameras that track and follow teachers and students around the room to record lessons or PD training sessions and upload them to the cloud, and of course iPads.

All of these education tools can be easily integrated into your chosen classroom display. Easily, that is, if the right connection has been catered for, and in the right place. Otherwise its just a nightmare of adaptors, connectors and a general mess resulting in poor quality connection often with frustrating drop outs. There's nothing worse than a bunch of cables that are both dangerous and messy because the wall inputs are in the wrong place or are the wrong type.

Things to consider:

1. Existing Classroom PC Connection
2. Connection of another devices
3. Location of inputs in relation to PC's and devices



Question 5:

What Training & Support do I Need?

Most schools have teachers with varying levels of experience when it comes to AV hardware and software applications. Some will adapt easily to your new hardware and also make the most of any new software. Others will need a bit more guidance and training in order to not only feel comfortable, but to also enhance the teaching and learning experience.



Any new hardware and especially software provided with your new system will need some level of training. Ask your AV supplier what training and support is included with your new system. It should include tailored training sessions specific to the needs of your teaching staff, as well as follow up training including advanced features and ongoing support.

Also ask your AV supplier about what happens if something goes wrong with your hardware. Does it need to be taken away leaving your classroom without a system to use? Or do they have a replacement whilst your system is being repaired?

Things to Consider:

1. Ease of use for the hardware chosen
2. Training for hardware and software included
3. Warranty and Replacement policy



In Summary

We hope this has given you the information you need to begin your investigation into your school AV system upgrades. Consider the features and benefits of each system and make a decision based on a needs basis and what best suits your classroom, not on what seems cheap that month, or trendy and the time.

If you are unsure then ask your friendly AV supplier to conduct a school wide system analysis and work together to implement a thought out upgrade path for the technology in your school. Ask for side by side demonstrations so you can see first hand the differences in the technology available to allow you and your team to make an informed decision. Once you have chosen your supplier and your solution, insist on training for your teachers both on the hardware and any software provided.



Read on for a description of the 4 main types of classroom systems available!



The 4 Main Types of Classroom AV Systems

1. *Ceiling Mounted Projector and Drop Down Screen (or Whiteboard)*
2. *Extreme Short Throw Wall Mounted Projector*
3. *TV or LED Display - Wall Mounted*
4. *TV or LED Display - Mobile Trolley*

1.



2.



3.



4.





1. Ceiling Mounted Projection Systems

Ceiling mounted projector and drop down screen:

This solution is being utilized less and less in the classroom due to the availability of technologies. However there are still areas within the school where this may be a suitable option. The main areas where this solution is suitable include:



- school halls and
- auditoriums, or multipurpose areas such as your school undercover or assembly areas where a large screen solution is required for large audience numbers, for now let's stick to classrooms.

A ceiling projector and drop down screen may still be suitable for a specialty room such as media or art room where images or video content simply needs to be displayed without the need for annotation or interaction. A drop down screen does not take up permanent wall space and can simply be retracted to allow for pin boards or artwork to be displayed. This solution may be utilised where the room layout does not lend itself to a wall mounted projector or LED Display. This solution does not provide the ability to annotate or interact with the image or utilise any collaborative functions.

Ceiling mounted projector and whiteboard

Once again this is a system utilized less now as newer extreme throw technology is available. Whilst similar in design to the option above, this solution does allow for traditional ink based whiteboard markers to be used over the image projected. This solution may still be suitable in a classroom where the whiteboard is utilized for the majority of teaching but where image or video projection is needed from time to time. Eg Secondary math or music room etc...



2. Extreme Short Throw Wall Mounted Projector

This system utilizes a wall mounted projector installed directly above the whiteboard. The projector sits very close so board shadowing is minimized when compared to ceiling or short arm mounted projectors.

This system comprises of the projector, a whiteboard, and usually a pair of classroom speakers. These components are connected via cabling and an AV wall input plate allowing for connection of a computer. There are various models available, including interactive and digital annotation models as well as wireless connectivity and collaboration features. The maximum image size achievable is around 100" (diagonal). The main benefit of this solution v's interactive LED display is initial cost of implementation. Whilst this solution is lower in cost to purchase, it does come with the usual maintenance issues associated with projectors such as lamp replacements and filter cleaning. Lamp replacement costs have certainly come down over the past few years, however there is still the need for a replacement and maintenance schedule incurring associated labour costs. It should also be said that this solution is not the best choice should you need or want a mobile system due to the constant need to focus and calibrate when moved.





3. TV or LED Display - Wall Mounted

Offering the best image quality available today as well as ease of use, this solution should certainly be considered when upgrading a standard classroom AV system.

Other than high picture quality, a residential TV will offer little in the way of classroom features and should only be utilized where display of content is all that is required. This may be in a specialty media room etc...



For most classrooms, an interactive solution should be considered as it will offer not only the highest picture quality available (4K) but also built in annotation and interactivity, wireless connectivity, collaboration features and a full software suite designed specifically for the classroom and education, rather than whiteboard software only.

Whilst initial cost of implementation is higher, this solution will not require any maintenance so there are literally no ongoing costs to the school. Warranty on these should be 5 Years fully covered onsite and in the unlikely event of failure, the AV supplier can simply swap the unit and take care of warranty repairs. As this solution is comprised of only one component, faults are rare and do not arise as a result of incorrect connections between devices. Like a giant iPad on the wall, it does not require calibration or focusing... ever! Ask teachers what they find frustrating about their classroom projector or interactive whiteboard system and they will most likely say focus and / or calibration. This frustration is eliminated with the right interactive TV or LED display solution.



4. TV or LED Display - Mobile Trolley

This solution is also the best option should a mobile system be required. In fact, there are many mobile options ranging from Kindy Solutions right up to motorized tilt trolley solutions for use with collaboration software. Unlike projectors, your preferred size must be chosen at the time of implementation. Sizes available are typically 55", 65", 70" and 75" for most classrooms. Whilst image size is generally smaller than what can be achieved with a projector, higher image quality results in smaller text being more easily read. Furthermore, a good interactive LED display will have additional options available such as the ability to have a built in modular PC or even Android which can totally eliminate the need for any cabling.





In Summary

As you can see from the descriptions above, not all classrooms are the same. However, it is true to say that most standard classrooms would benefit most from options in the last two categories. Consider the features and benefits of these systems and make a decision based on the following.

Choose your system to best suit the classroom based on:

1. Room Size & Student Numbers
2. Room Layout - e.g. the positioning of windows and walls etc...
3. Type of Classroom - e.g. is it a standard classroom or specialty room?
4. Type of content and teaching style - interactive or display only and do you need to cater for other devices such as iPads, doc cameras etc...
5. Fixed or Mobile. Does the system need to be moved from room to room? Do you need height adjustment and / or collaborative functions such as table mode?





In Summary: Continued

Pros & Cons of Projectors V's LED Displays

Projector Pros

- Lower purchase price
- Larger image at lower cost

Projector Cons

- Ongoing maintenance & costs
- Requires images alignment & focus
- Calibration (even auto calibration can be frustrating)
- Lower brightness due to ambient light
- Inconvenient for mobile use
- Requires multiple components connectivity

LED/TV Display Pro's

- No calibration required
- No alignment or focusing ever
- Highest image quality
- Higher brightness
- No maintenance = No ongoing costs
- Mobile friendly
- Best built in features

LED/TV Display Cons

- Initial cost of implementation



Thank You...



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Our FREE "School AV System Analysis & Plan" (Valued at \$250)

1. Site Inspection & System Analysis

First up, we visit your School and assess your needs and or frustrations with your existing system.

We take digital photographs, measurements and discuss what it is you would like to achieve, review different options available for your budget and then provide our recommendations.



2. AV System Plan

Following your System Analysis we go back to our office and custom design a system for you taking into account specific requirements and other important factors such as functionality, ease of use and aesthetics.

Our design team will use their 80 years of combined industry experience to produce a system schematic illustrating interconnection and layout.



3. Presentation of your AV Plan

So that you have a clear understanding of the proposed AV system, we present you with a detailed "System Plan & Proposal" including system design options, product information and budget options.

Any additions or alterations are considered and if required, we adjust the proposal accordingly.

Our 3 Stage Analysis ensures the system we recommend meets your requirements and budget whilst considering implementation timelines (*not worked out after the sale*) in order to supply you with all the information to make a fully informed decision.



Call 9228 1681 to discuss your school's AV requirements. From this conversation, we can either organise an immediate proposal for simpler requests or book your FREE "School AV System Analysis and Plan".

