

Using, monitoring and controlling online resources and the internet, within the modern ICT classroom.

Increasingly in the modern ICT classroom, the internet provides a wealth of complementary resources for curriculum teaching as well as an effective means of communication between both teachers and students on a daily basis.

The availability and involvement of the internet within the classroom presents a number of exciting opportunities for modern teaching. However, it also provides a number of challenges in controlling the scope of access for students, the introduction of inappropriate content and the ability for inter-student communication.

A number of solutions are currently available within the ICT classroom. Most of these deliver a common level of basic functionality focussed around the management of computers within a LAN environment. Some provide an additional level of control over student behaviour and this typically will encompass limitations on both application and internet usage. Few, if any, provide an all-encompassing solution, allowing both protection and accountability for both the teacher and students.

NetSupport School Version 11 provides the most complete set of monitoring, collaboration and controls for internet usage currently available and this white paper aims to provide an overview of both the specific challenges faced and the methodology applied to address these.



Student Internet access

In the modern ICT lab, it is an accepted norm that within most environments a level of internet access will be prevalent and, more importantly, required in order to effectively deliver curriculum content and teaching.

The fundamental issue faced by schools is the need to provide access to appropriate online resources, yet retain control over the sites and content viewed by their students.

Like most classroom management solutions, NetSupport School provides the ability for a teacher to control internet access on four specific levels:

1. The product can operate totally transparently, allowing for full and unrestricted access to the internet.
2. The product will allow full access to the internet, except for sites deemed inappropriate by the teacher or school. These "blocked" lists are maintained within the NetSupport School teacher console and can be shared across classrooms. Additionally, lists can be created for specific curriculum lessons as it is recognised that a website may only contain appropriate content, but may still be unsuitable for a specific classroom topic. This point holds additional relevance as some schools already utilise proxy servers that deliver high-level internet content security but, typically, these solutions do not provide for granular distinction based on the age of students within the classroom or the area of focus for a given lesson.
3. The product will allow limited access to the internet by providing a list of approved websites that has been specified by the teacher. The student's browser is prevented from visiting any other websites and will automatically redirect the student back to a blocked page so that it is clear the site requested is not simply unavailable but has been selectively blocked.

A number of classroom management products provide a basic level of URL approval as explained above. However, this approach can prove extremely restrictive for large content sites where it would be appropriate to provide access to certain resources but not others. As such, unique to NetSupport School, site restrictions can also be provided at a filtered level. As an example, rather than a blanket block or approve of the website www.discoverychannel.com, a teacher could allow access to www.discoverychannel.com/guides, which provides suitable history content, but prevent access to any other areas of the Discovery Channel website, such as games and online TV reviews

4. The product provides the ability to completely block access to the internet, again for either individual students or the entire class. As with most tools, ease of use is key and as such any of the above modes can be set as the default mode for lesson start-up, removing the need for the teacher to apply settings before the students have a chance to explore online.

Taking internet control to the next level

The increasing dependence on online resources within the classroom naturally provides even greater pressures and concerns for the classroom teacher in avoiding inappropriate sites and content being presented to students either intentionally or, more commonly, by accident. Many online resources present perfectly reasonable topics but often are undermined by ever-changing banners and advertising medium which typically does not carry the same level of relevance or suitability.

NetSupport School is also unique in providing direct access via its "Safe Search" feature to the existing content filtering algorithms provided by most of the leading internet search engines. Each search engine provides existing controls for online users and allows a search to exclude content deemed inappropriate for the general user.

Safe Search support can be activated by the teacher and, in doing so, when a student visits any of the leading search engines, this additional layer of filtering will be automatically applied to all subsequent searches by the student and will prevent them from attempting to disable this feature via their browser configuration.

We believe this feature is an obvious and natural extension of ICT good practice and, as such, the feature can also be enabled when a teacher is performing a Show - when the teacher is showing their screen to the rest of the class with NetSupport School.

This avoids, in many cases, the risk of a search term being mistyped and inappropriate results being displayed for all to see. Similarly, the approved list of websites can be applied to the teacher PC during a Show to further prevent misdirected site requests.

There are often occasions as covered above where a teacher wishes to visit a website, present this to the students and then leave the students to continue the lesson online. This poses a usability problem for most classroom management applications since when a screen show from the teacher ends, the student is left to start the process from scratch within their own browser. NetSupport School Version 11 is unique in offering a co-browse feature. In essence, this allows a teacher to open a given website on both their own PC and all classroom computers. As the teacher navigates between pages or scrolls down a selected page, the students' browsers follow suit. At the point where the instruction ends, the teacher can leave the students on the selected pages, allowing them freedom to review the content presented but unable to deviate from those resources.



Monitoring student internet access

Even though classroom management products provide the basic functionality to control availability of websites, it is still important throughout a lesson for a teacher to quickly and easily monitor the current websites being visited by each student and their activity on each site. To assist with this, NetSupport School provides a number of both standard and unique features to make this task as intuitive as possible for an already busy teacher.

1. When viewing the Internet tab within the NetSupport School console, each student icon will be overlaid with the website icon that is currently active and, if restrictions are not currently applied, each will carry either a green or red highlight to indicate their anticipated suitability.
2. The teacher can quickly flip to Detail view for the entire class and view the full URL of each active website for all students and also see all additional websites loaded but either minimised or currently inactive. A teacher will be used to monitoring student activity at a visual level and, as such, will look to make sure that all students' screens have their current expected website open and in view. NetSupport School confirms this but also provides a quick and easy summary of other sites they may be viewing while the teacher's attention is elsewhere.
3. The standard view within most classroom management products is that of the classroom desktops. Typically, these are shown as a grid of thumbnails showing each computer screen. Unique to NetSupport School is the ability to overlay these thumbnails with current internet and application usage, removing the need for a teacher to tab away from the main monitoring screen.
4. Either during or at the end of class, the teacher is able to view a full history of internet access and sites visited for each student or the entire class. This summary can be saved for future reference or printed and removed.

You know what website a student is on but what are they doing?

As explained above, the process for controlling access to specific websites is now easily achievable. However, to provide a total management and monitoring solution, we believe it is also important to provide a teacher with an effective means of monitoring the students' activity on a given site, especially if the site in question provides online forms or forum-based content. The latest version of NetSupport School is the first and only classroom management product to also provide real-time keyboard monitoring of each and every student. As you would expect, this feature can be enabled or disabled as and when appropriate and, when activated, provides a visual indicator to the students on their classroom toolbar (another unique feature from NetSupport School).

The power of this feature is its simplicity. A teacher does not have the time to individually monitor each student PC, open a view window and attempt to read the content direct from their desktop, so NetSupport School provides a simple view listing each active student and their current keyboard input (excluding password fields).

If the class has been tasked with entering details about a specific historical event, then the teacher can quickly see if a certain student has entered incorrect data or, equally important, has yet to begin entering anything. The keyboard monitoring feature can also be used within standard desktop applications.

Beyond websites

Communication from classroom computers to the outside world extends well beyond simple access to websites. The same communication channels can be utilised for email and, increasingly, online messenger applications. Both of these media provide challenges for classroom security but cannot simply be disabled as they also feature as an element of the ICT curriculum. NetSupport School provides a number of measures in managing these resources.

1. Utilising the application control module, the teacher can choose to allow or restrict the running of any applications for the duration of the lesson and, as such, could prevent a standard email application from being used.
2. Where the curriculum requires email to be available, the keyboard monitoring component within NetSupport School provides a real-time view of student input when creating new mail.
3. The latest version of NetSupport School also provides a unique instant messenger monitoring component. This view provides the teacher with real-time details of any messenger applications loaded on each student PC, when a student signs in to a messenger application and the details of what they send or receive during the conversation. Most leading messenger applications, including MSN, AOL and Yahoo Messenger, are supported.

This addition to the NetSupport School application has increased importance with the concerns surrounding both cyber bullying as well as the inappropriate sharing of coursework or answers within exam conditions.

