SecEd
Guide to...

Web-filtering
& e-safety

Key content

- How to effectively manage 'bring your own device' programmes to maximise the impact on students' learning and outcomes

- What schools should look for in effective web-filtering and e-safety technologies

- Advice on formulating Acceptable Use Policies that are fit-for-purpose

- Case study of how effective web-filtering and e-safety can contribute to high-quality teaching and learning

- The role of e-safety in meeting Ofsted criteria

In association with **Lightspeed Systems**

GUIDE TO...
Web-filtering & e-safety

The landscape for the use of technology in schools has changed beyond recognition in recent years. The IT suite of neatly arranged PCs or Macs around the edge of the wall may still exist in some schools but things have moved on.

Social media as a means of communication has become the norm among young people, and the internet is invaluable as a learning resource. Where mobile phones and other gadgets might previously have been confiscated at the school gates, a quite different attitude now prevails.

But opening up the use of technology and its many and varied applications brings new challenges to schools in terms of connectivity, accessibility and blocking access to inappropriate content while the user is on-site. Safety is of paramount importance.

Web-filtering in schools

"Personal devices are now the future in education," says Simon Eappariello, technical director at Lightspeed Systems. "Most schools now operate a 'bring your own device' approach enabling both staff and students to bring in and use their own handheld devices on school property. Items such as SmartPhones, Kindles and tablets, as well as a diversity of operating systems such as Android and Apple IOS, offer amazing opportunities for learning, but they also present a big challenge for schools. All of these technologies need to be managed by schools to ensure that students, in particular, are kept safe."

There was a time when the priority was to keep on-site computers and technology secure. Now, with potentially hundreds of different gadgets being brought on to the premises every day, a whole new, more sophisticated web-filtering system is needed, and with it better through-put on the school's connection.

But what the web-filtering system must do to be effective in a school is to understand that its purpose is one of education, and that teachers need to maintain control over what can and can't be accessed.

"The through-put on the internet connection might have been adequate when it was used solely on the school's own PCs, but it is no longer so with an increased number of devices. This is something that schools need to be aware of and they may have to consider increasing their connectivity."

Mr Eappariello described the importance of having an "agnostic" system which is able to support every type of technology. The web-filters should be able to be used on the school's static computers as well as on every handheld device that is brought in as soon as the user signs in. It means that staff and, in particular, students using the wireless internet connection in school through their own devices will have the same protection from inappropriate content and material as they would if they were using the school's own technology.

For example, a non-intrusive "transparent bridge", such as the one developed by Lightspeed Systems, works without a proxy server enabling every personalised device brought into school to access the internet.

"Schools have a responsibility to create a safe environment and that is where filters come into play," Mr Eappariello continued. "Web-filters are known for blocking websites that are inappropriate, but they can also guide users around the internet safely by filtering out certain pages. They can give teachers and students flexibility by allowing access to some pages but perhaps not the whole website."

One way of doing this is to allow teachers to create electronic portfolios where they can add the content they want students to access. For example, Lightspeed System's virtual learning environment, My Big Campus, enables teachers to post links to individual pages or sites that they want students to see and use for their learning for a limited time, before they are then blocked again.

"There has to be a balance," Mr Eappariello added. "What we don't want to do is to hamper learning by blocking off huge sections of the internet. It should

be up to the teacher to decide what they want to use, but it is our job as IT professionals to block any inappropriate content and links to inappropriate content.

"We need to keep staff and students safe, but at the same time give teachers the flexibility they need to decide what they want students to use."

Mr Eappariello said senior leaders also needed to consider whether the appropriate technology is in place and available on given days in the school year.

"For example, many examinations now take place online so schools need to ensure that they have enough bandwidth to enable these to take place without any hitches," he said. "It could be that, on those days, you restrict internet use and ban anything that uses videos and moving imagery. Part of a web-filter's job is to control utilisation."

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E-safety

Protecting students must be the main consideration of a school considering its ICT strategy. And as technology use moves beyond the computer suite and outside the sight of teachers, into every school bag and coat pocket, so effective mechanisms must be put in place to keep children safe.

The importance of this cannot be stressed enough because the reality is chilling. According to Earnie Kramer, Lightspeed System's general manager for Europe, every single school is a target for predators or hackers who want to get their hands on personal information.

"School leaders really need to understand this," Mr Kramer said. "They don't need to be experts in the details of the technology but they must understand that their school will be monitored and to take that

as a given. Information about pupils will be collected unless you put something in place to stop it.

"Every school needs to have in place an Acceptable Use Policy (AUP), but in most schools these are out-of-date and don't include many of the things they need to cover now. They probably won't have any mention of social media and all the other sites that are currently popular."

The AUP needs to be reviewed regularly because of the rapid changes in internet use and the availability of different types of website. What was happening five or more years ago won't necessarily still be on young people's radar now. Senior leaders looking to draft their AUP should consult experts who can advise on current trends and pitfalls.

Having an AUP – and demanding strict adherence to it – also sends an important message to students. "Children learning at school need to know that they have to use the internet responsibly and so will take that information home and use it there too," Mr Kramer said. "But schools have to define what they want to use the internet for, and then look for the most appropriate filtering product.

"They also have to make sure, from a management point of view, that the web-filtering system they install is not too restrictive. Schools can be over-protective and this will hamper learning. Whatever system you have must give you access to the right resources.

"YouTube, for example, is the biggest educational resource in the world and yet it is the worst place to send a 14-year-old boy. Many teachers are afraid to use it, but with the right system you can access the good resources and block the rest.

"Wikipedia is also often blocked in schools because it is unmoderated and difficult to check for accuracy, but it may be a useful resource to use to introduce new topics to students and teachers may want to use it. Headteachers need to give their staff the ability to control what material to use and trust them."

Mr Kramer added: "What is appropriate for teenagers to see may not be for primary school pupils, so the use of web-based content has to be appropriate to age. It is also not enough to rely on the web-filtering system to do the job for you. Teachers have to be vigilant too.

"The AUP should explain in detail exactly what the internet is being used for. You might want to allow social networking, for example, but have to ask

yourselves as the leadership team whether you want pupils to be using this to interact while at school."

Every school will have its unique needs and requirements that are based on the type of school, the age of the pupils and the requirement of teachers to use web-based resources.

Educating every student

While every school should have a fit-for-purpose AUP in place, this should not be seen as hampering learning in the classroom. It presents an opportunity for teachers to look for more creative ways of using online resources.

Mr Kramer said one way that teachers can improve internet usage, even with a web-filter in place, is by teaching students to use the most appropriate search engine for their needs. He explained: "Everyone tends to head straight for Google, but in fact one of the best skills that you can teach technologically minded children of the 21st century is that there are various search engines out there, some of which best support text, and others pictures and moving images."

While Google is good for text-based resources, Wolfram Alpha supports science and concept-based information needed for the STEM subjects, while Bing Image Search specialises in pictures, photos and images. This highlights the importance of having a quality web-filtering system that filters images as well as text.

"Teachers should also point students in the direction of high-quality learning resources now available on YouTube," Mr Kramer said. YouTube Edu, for example, contains examples of lessons and lectures uploaded by schools, colleges and universities from all over the world.

In some cases, "bundles" of resources and materials are available in certain themes and topics that are age-appropriate. "A good teacher will open up these opportunities to their students," he added.

"They might find, for example, that they have a pupil in their class who is struggling to understand a particular concept. It is possible that a teacher somewhere else has managed to explain this in a different way and has videoed themselves doing so. This is useful not just for pupils but also for teachers to observe others at work, and to gather examples of good practice."

Similarly, social media can prove invaluable to teachers in sharing ideas and resources, such as lesson plans, or seeking advice and guidance and supporting CPD. Mr Kramer continued: "Social networking is great for hooking up with people in an education context. In many schools, a department can consist of only one teacher, which can be very isolating. Social media can open up new possibilities for discussion and the sharing of ideas and is a very powerful tool from a teaching point of view."

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The presence of web-filters does not mean the school's system is entirely safe, however. Teachers should continue to be wary and vigilant in the classroom and should not rely entirely on web-filters to block undesirable content.

"Today's young people are very technologically savvy, even if they can be socially naïve. They will try their luck with accessing imagery or websites they shouldn't by putting certain words into search engines. Sometimes filters can be violated," Mr Kramer added. "E-safety is of paramount importance. A teacher would not let a fight break out in the classroom for fear of someone getting hurt, any more than they should ignore what pupils are doing on their handheld devices."

Where the system fails, however, and pupils are exposed to inappropriate images or content, this should be reported to senior leaders in the school, he added. "In teaching pupils e-safety, teachers are giving children and young people the knowledge and tools to be able to look after themselves better online, and gradually giving them greater freedoms as they get older to get access to the resources they need for their studies, in the right context and minimising any risks to their safety while they are online."

Striking the balance

Case study: Magna Carta School

Accessing websites with the best and most appropriate content to support lessons used to be a problem for staff at Magna Carta School. The web-filtering system was so rigid that it didn't allow them access to the material they required, or they had to find an IT staff member to solve the problem for them.

"Before the filtering process was too aggressive, so staff couldn't get to the things that they wanted to, and then maybe they'd just say 'okay, I can't be bothered. I give up'," said Anthony Jorge, network manager at the school.

"Now we give the teachers more control as opposed to them coming to us, the administration. In doing so, we're allowing staff to unblock the content they need and to engage with the students more, rather than spending their time coming to us for help."

As in many schools, the internet is an integral part of the learning process at Magna Carta, which is based in Staines, Middlesex. While having a web-filtering system is vital to enabling the network to function properly, it is also important for teachers to have control over what content is used in lessons and the learning process.

"The internet is used a lot more now than it used to be and it's a part of daily life for our pupils," Mr Jorge said. "Not a day goes by when a student goes to a particular lesson and doesn't use the internet. It's vital that it is used without interruption. So if the teacher needs to unlock a certain website because it's needed for a lesson, then that's fine, they can do that.

"Giving teachers absolute control and flexibility is a must and we can control what they see but also give them control over what they do. We still get calls asking us to unblock some sites but now it's every couple of weeks rather then several times a day. We no longer hear teachers saying 'I can't get to this' or 'this is stopping a lesson from happening'."

The school has recently introduced Lightspeed Systems for its web-filtering needs after six years of using another system. Every school needs its own unique model and has different needs.

"It simply gave us the features we wanted," Mr Jorge said. "Everyone had to adapt to the new ways of doing things, and it was a case of providing training materials to the staff so they learned how to use it."

As in most schools, YouTube used to be blocked completely to students at Magna Carta, though teachers had some access to the content. Now specified videos can be accessed through the school's My Big Campus facility, which is a safe online learning platform used by schools to connect with teachers, pupils and parents.

Working on a similar principal to a virtual learning environment, it appears to young people as being similar to Facebook and allows students to talk to each other or a teacher about any aspect of school life, including their studies.

Through it, teachers can download video links of the sites they want students to access. It has given the school more opportunities to tap into YouTube than ever before.

The Lightspeed Systems web-filtering approach also allows monitoring of pupil activity using the internet in schools. Mr Jorge can see what searches are being made, what key words are being used and who did what and when, providing the school with trends and patterns of behaviour in internet use and flagging up areas where security might need to be tightened up.

He believes there is no escaping the importance of IT use as part of the learning process. "It's an important step in education," Mr Jorge said.

"You don't necessarily need IT for teaching but it makes life a lot easier for both parties and it has a vital role. It's essential really.

"For young people, it's a way of life and they take to it like a duck to water. It makes it so easy for them to communicate, both with their friends and their teachers."

E-safety and Ofsted

As the use of technology and the internet assumes a bigger part in the education process, so its use and management in schools is being monitored by school inspectors at Ofsted.

In appraising schools' performance, the inspections watchdog not only examines achievement and attainment of pupils in ICT and computing as a subject, but also how well the school engages with technology and protects children and young people from the dangers of the internet.

When looking at the effectiveness of ICT education and in seeking outstanding practice, inspectors will want to see that e-safety is a priority across all areas of the school, alongside ensuring that pupil experiences are excellent and that teaching itself is rich, interesting and relevant.

Conversely, performance will be deemed inadequate if e-safety is neglected, for example if the Acceptable Use Policy is out-of-date and its content has been superseded by newer technologies and applications.

One of the four core strands of inspection is the behaviour and safety of pupils, under which the Ofsted framework states that schools will be judged on "whether pupils feel safe and their ability to assess and manage risk appropriately and to keep themselves safe".

The Ofsted Inspection Handbook makes specific reference to "e-safety" and pupils' understanding of "cyber-bullying" in this regard.

Inspectors are also instructed to consider cyber-bullying as part of their judgement about anti-bullying measures within a school, again under the behaviour and safety of pupils strand.

The quality of leadership in management of ICT may also be judged to be inadequate if the school has failed to implement e-safety education across the curriculum, if there is little evidence of e-safety training for staff, or e-safety policies are generic and not regularly updated.

Inspectors will also want to see that pupils know and understand that they need to stay safe, and how to do so.

Schools may also be "marked down" in the eyes of inspectors if they note that teachers are not making the best use of ICT resources, or where there are insufficient links between ICT and other subjects.

Ofsted inspectors will expect to see that senior leaders in a school are well-informed about current initiatives in the subject, and that the subject as a whole has a live profile within a school.

Similarly, there will be an expectation by inspectors that staff and pupils have adequate access to ICT equipment when it is required.

Resources and further information
- Lightspeed Systems' expert Earnie Kramer blogs for *SecEd* on topics including web-filtering, e-safety, bring your own device and mobile learning: www.sec-ed.co.uk/blog-search/author/40
- For a short video on web-filtering, go to www.lightspeedsystems.com/en-uk/products/rocket/
- For more information on web-filtering by Lightspeed Systems, visit www.lightspeedsystems.com/en-uk/resources/web-filtering/
- For details on My Big Campus, visit www.mybigcampus.com
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