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School use of learning platforms and associated technologies

Carey Jewitt, Christina Hadjithoma-Garstka, Wilma Clark, Shakuntala Banaji and Neil Selwyn

London Knowledge Lab
Institute of Education – University of London
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1 Executive summary

1.1 Background to the research project

Primary and secondary schools are now making increasing use of 'institutional-level' information and communications technology (ICT) to support and enhance their teaching, learning and management activities (BESA, 2009). The precise nature and form of these technologies varies from school to school, most often involving the use of management information systems, virtual learning environments, communications technologies and other information and resource sharing technologies. In many schools these technologies are integrated into shared online systems and environments (hereafter referred to as 'learning platforms') that allow teaching staff, learners and parents to access learning resources, communicate and collaborate with each other, and enable schools to monitor, assess and report on learner progress.

A learning platform is an integrated set of interactive online services that provide teachers, learners, parents and others involved in education with information, tools and resources to support and enhance educational delivery and management. It is not a single 'off the shelf' product but a collection of tools and services designed to support teaching, learning, management and administration. In implementing a learning platform, education providers can tailor its functionality to the needs of their users by bringing together a range of different software applications which have particular features. These can be commercial or open source products, self-built resources or free-to-use web services. The existence of technical standards means that these tools can be integrated into a cohesive online environment which users access through a single entry point.

1.2 Aims and outcomes of the research project

The purpose of the study was to provide key data, analysis and exemplars to contribute to a robust evidence base on the adoption and effective use of learning platform and other integrated technologies in primary and secondary school education. A key aim of the project was to identify *transferable* examples of effective use of learning platforms and associated technologies. The project was designed to deliver three main types of research outcome centred around the production of evidence for effective use of learning platform technologies – that is:

- a set of **case studies** of schools that have effectively implemented and used learning platforms and associated technologies to help achieve educational or organisational benefit
- an **evidence base** and examples of effective implementation and use
- a set of **benefits** describing how schools have used these technologies to help them achieve their aims or to tackle specific issues.

1.3   Research approach

The research project took a two-stage approach to addressing these aims and objectives. The first phase involved a series of desk-based activities – most notably a knowledge mapping exercise of previous literature and expert opinion. The first phase of the project also involved the identification of a sampling frame of primary and secondary schools in England which could be judged as 'effective users' of learning platform technologies, and the subsequent selection of a sample of twelve case study schools (six primary, six secondary) chosen for their diversity of technological and social characteristics. The second phase of the research process then involved conducting an in-depth investigation and analysis of the use of learning platform technologies for learning, teaching and management in this sample of case study schools.

1.4   Findings from the literature review

While a relatively large number of sources could be located, the majority of the existing literature on learning platforms and associated technologies took the form of commentary and anecdotal observation, rather than empirical research *per se*. Moreover, there was little – if any – empirical literature on the *integrated* use of 'learning platform' technologies in school settings. At best, empirical studies reported on the use of one of the constituent elements within a school setting – most notably the use of learning platforms. As such, there was a relatively limited range of existing literature related to the aims of the review. A number of areas of benefit and improvement emerged from the existing empirical literature as being associated with learning platform technologies in schools.

1.5   Evidence of learning platform use across the 12 case study schools

The nature and form of the learning platforms technologies differed between the 12 case study schools in the second phase of the research project. Some schools were using their learning platform packages in an 'off-the-shelf' manner, although all had made decisions relating to the customisation of the design and style of web pages and applications. Others schools were using learning platform technologies in a more 'bespoke' manner – developing combinations of VLE tools, management information systems and communication applications. In all of the case study schools learning platform technologies now provided a key context for the use of ICT throughout in the school. However, all schools had developed their uses of the learning platforms in a largely 'bottom-up' fashion, so that the actual uses differed from school to school. Nevertheless, all 12 schools had developed distinct uses of the learning platforms in the areas of management/leadership, teaching, learning and parents/families.

1.6 Evidence of schools' development of learning platform technology use

The integrated use of learning platform technologies in each of the 12 schools had evolved from schools' separate use of various technologies over the last ten years or so – in particular email and MIS, diary and calendar applications, school networks, intranets, school websites and stand-alone managed learning environments. For some schools the 'journey' to their current use of learning platform technologies had been relatively straightforward – often decided on by their local authority or, for some primary schools, through school clusters. Other more 'e-confident' secondary schools had developed a good knowledge of the learning platform marketplace (sometimes through contact with Becta and visits to the BETT show), and then made an informed decision to invest in their own systems. These schools were clearly already confident procurers of ICT products.

1.7 The identifiable benefits of learning platform use across the case study schools

From the research activities conducted in the 12 school settings the project team was able to identify 12 distinct key areas of benefit arising from the effective use of learning platforms and associated technologies. These benefits were apparent in at least three of the case study schools, and the nature of the 12 areas of benefit (in order of prevalence) is as follows:

- **Improved organisation of information and communication across the school** – here learning platforms were found to be leading to improved coordination of information and communication within school communities (i.e. between school leaders, managers, teachers and governors); improved communication and organisation of learning between teachers and learners; and expanded opportunities for school-focused communication between learners.
- **Parental involvement and supporting learning at home** – here learning platforms were leading to parents being better informed about their child's learning and about the school, and learners receiving more support to continue learning at home.
  Increased opportunities for independent and personalised learning – here learning platforms were leading to an increased diversity of learning resources; widened access to learning resources; an increased relevance of learning resources; and increased motivation and support of independent learners.

- **Enhancing the accessibility, quality, relevance and range of learning resources** – here learning platforms were found to be helping teachers to access resources to support the curriculum; providing a range of engaging, fun and motivating resources for learners; and providing support for learner involvement in creating resources to enhance links between the school and the family/community.

- **Improved processes of monitoring and assessment for learning and teaching** – here learning platforms were found to be leading to increased opportunities for learner self-assessment and peer review; broadened forms of assessment and feedback; help for teachers to set effective targets; and effective use of information to identify learners who need additional support.

- **Increased opportunities for collaborative learning and interaction** – here learning platforms were leading to increased collaboration between teachers and schools to pool resources and expertise, and enhanced collaboration between learners.

- **Enhancing digital literacies** – here learning platforms were found to be helping learners to develop functional technology skills, collaboration skills and critical thinking about digital technology.

- **Making best use of teachers' time** – here learning platforms were leading to increased efficiency in communication and collaboration, enhanced opportunities for flexible working, and effective management and organisation of resources.

- **Facilitating effective and strategic leadership and management of teaching** – here learning platforms were leading to enhanced communication of information and goals between teaching staff, school managers and leaders; better coordination of tracking and analysis of school data; and enhanced monitoring and management of teaching.

- **Supporting additional educational needs and inclusion** – here learning platforms were found to be enhancing schools' capacity to cater for learners who had greater difficulty in learning than the majority of their peers.

- **Improved management of student behaviour and attendance** – here learning platforms were found to be supporting schools' efforts to encourage learner attendance and promote positive behaviour for learning. This was being achieved through the enhanced recording and tracking of learner data on attendance and behaviour, and enhancing communication and sharing of learner data between teachers, school managers, parents and learners.

- **Building the school identity and community** – here learning platforms were found to be providing opportunities for enhanced student voice and school democracy, and leading to increased support for the development of school community and enhanced engagement with the wider community.

1.8 Emerging conditions for success for effective use of learning platforms

The project was able to identify a number of conditions that underpinned the effective use of learning platform technologies in schools. These conditions allow schools to identify common barriers and impediments to realising the benefits that learning platforms can support, as well as strategies for overcoming these. The emergent key factors and conditions that facilitate the successful implementation and take-up of learning platforms included the following:

- Schools having developed a tradition of effective procurement and implementation of innovative use of ICT
- Schools having underpinned the implementation of the learning platform with a coordinated, positive and enthusiastic strategic approach by senior leaders and managers
- Schools having developed a shared ownership of the deployment of the learning platform across different sections of the school community, and relying on an 'organic' diffusion of use
- Schools having prioritised support, training and continuing professional development for teaching staff
- Schools having prioritised the development of high-quality, relevant learning platform content
- Schools having drawn upon a range of stakeholders in the effective implementation and use of the learning platform within the school, including school senior leaders, teachers, support staff, learners, parents and governors as well as the local authorities, and industry suppliers
- Schools having managed expectations of success and understanding the implementation of the learning platform as any other management of change and as a continuous process.

2   Background to project, aims and objectives

2.1   Background to the project

Primary and secondary schools are now making increasing use of 'institutional-level' information and communications technology (ICT) to support and enhance their teaching, learning and management activities (BESA, 2009). The precise nature and form of these technologies varies from school to school, most often involving the use of management information systems, virtual learning environments, communications technologies and other information and resource sharing technologies. In many schools these technologies are integrated into shared online systems and environments (hereafter referred to as 'learning platforms') that allow teaching staff, learners and parents to access learning resources, communicate and collaborate with each other, and schools to monitor, assess and report on learner progress.

Learning platform technologies are set to form an integral part of schools' ICT provision in the next decade. Most recently, government policy has moved to encourage use of learning platform technologies throughout the English school system with an encouragement for all learners to have access to a personalised online learning space by 2008, all secondary schools to be providing parents with access to online information about children's attainment, attendance, behaviour and special needs by 2010, and all primary schools to be doing the same by 2012.

At present, schools are being encouraged to develop forms of learning platform use that best fit their specific context and needs. As a collection of technologies, learning platforms are not usually a single technological product, but often represent a bespoke collection of different tools and applications that are centrally connected and coordinated within the school. Some schools will be using centrally provided learning platform suites provided by commercial companies or local authorities. However, other schools will be using self-built, Open Source or free-to-use applications – collating and integrating a number of different applications together.

The potential benefits of learning platforms are varied – extending school-based learning into family settings, and increasing the involvement of teachers, learners, parents and others in the provision and administration of school learning As yet, the empirical evidence for the educational outcomes of learning platform technologies in schools is limited. Despite instances of good practice, the general use of these technologies has been inconsistent across the last ten years. Recent research by Ofsted[1], for example, has suggested that schools' use of learning platform technologies are often dependent on the interest and enthusiasm of individual staff rather than a system-wide commitment to technology use. The current research

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[1] Ofsted (2009), *Virtual learning environments: an evaluation of their development in a sample of educational settings* [http://www.ofsted.gov.uk/Ofsted-home/Publications-and-research/Browse-all-by/Documents-by-type/Thematic-reports/Virtual-learning-environments-an-evaluation-of-their-development-in-a-sample-of-educational-settings]

project, therefore, set out to examine how learning platform technologies are being used across 'early adopting' English primary and secondary schools. The underlying intention of the project was to provide a transferable set of data and evidence that could be used to support the effective use of learning platform technologies across schools regardless of their technological 'maturity' and wider school context.

2.2 Research aims and objectives

The project was designed to focus on three main research aims:

- To develop a detailed understanding of how learning platform technologies are being implemented, adopted and used within English primary and secondary schools
- To provide evidence for the benefits that are being achieved through the effective use of learning platform technologies – in particular how they are fitting with schools' wider learning, teaching and management strategies
- To develop a detailed understanding of the factors and issues underpinning the effective use of learning platform technologies in schools – including common barriers and impediments to use, and the corresponding strategies for overcoming these barriers and impediments.

The purpose of the study was, therefore, to provide key data, analysis and exemplars to contribute to a robust evidence base on the adoption and effective use of learning platform and other integrated technologies in primary and secondary school education. A key aim of the project was to identify *transferable* examples of effective use of learning platforms and associated technologies. Thus, the project was designed to deliver three main types of research outcome centred around the production of evidence for effective use of learning platform technologies:

- A set of **case studies** of schools that have effectively implemented and used learning platforms and associated technologies to help achieve educational or organisational benefit
- An **evidence base** and examples of effective implementation and use
- A set of **benefits** describing how schools have used these technologies to help them achieve their aims or to tackle specific issues.

This report presents an overview of the research activities conducted towards these aims and objectives and presents a set of twelve identifiable benefits of learning platform use arising from the data collection process. The case study reports from each of the schools in the study are provided as separate documents.

2.3 Summary of the research approach

The research project took a two-stage approach to addressing these aims and objectives. The first phase involved a series of desk-based activities – most notably

a knowledge mapping exercise of previous literature and expert opinion. The first phase of the project also involved the identification of a sampling frame of primary and secondary schools in England which could be judged as 'effective users' of learning platform technologies, and the subsequent selection of a sample of twelve case study schools (six primary, six secondary) chosen for their diversity of technological and social characteristics. The second phase of the research process then involved the conduct of an in-depth investigation and analysis of the use of learning platform technologies for learning, teaching and management in this sample of case study schools. Further details of the research approach are provided at the end of this report in Section 7.

3   Key findings from the review of existing literature

As a precursor to research in the 12 case study schools, the project team conducted a review of the existing academic research-based literature relevant to the use of learning platforms in compulsory school settings. The review aimed to highlight what is already known about learning platforms and associated technologies in schools and, perhaps more importantly, identify emerging issues that require further investigation. The review of the empirical literature was conducted in September and October 2009 using a wide range of academic bibliographic sources as well as recommendations for pertinent literature supplied by fifteen expert interviewees (see Appendix A). A range of commercially produced evaluations of specific learning platform technologies were also reviewed.

While a relatively large number of sources could be located, the majority of the existing literature on learning platforms and associated technologies took the form of commentary and anecdotal observation, rather than empirical research *per se*. Moreover, there was little – if any – empirical literature of the *integrated* use of 'learning platform' technologies in school settings. At best, empirical studies reported on the use of one of the constituent elements within a school setting – most notably the use of virtual learning environments. As such, there was a relatively limited range of existing literature related to the aims of the review. A number of reasons can be suggested to explain this paucity of empirical evidence. Firstly, learning platform technology has not been an established feature of school ICT use for a sufficient time to feature in published empirical literature, which is often characterised by a 'time lag' of two years or more from the point of data collection to the point of publication. Secondly, the educational technology literature remains focused on the individual use of technology by teachers and learners, rather than institutionally related technology use.

With these limitations of rigour and relevance in mind, the following areas of benefit and improvement emerged from the existing empirical literature as being associated with learning platform technologies in schools:

Learning benefits – claims from the existing literature

- Supported innovative approaches to learning
- Learners appreciated immediate feedback provided by the system and ease of access
- Enhanced collaboration between learners ('collaborative innovation')
- Developed 'learning communities'
- Enhanced learners' level of creativity, enjoyment, motivation
- Supported the development of bonds between instructor and learners
- Improved learners' 'extrinsic motivation' to learn
- Provided ability to access and update learning materials and other information from a variety of locations both on and off the school premises
- Enabled approaches to learning that were otherwise not considered feasible
- Provided easy access to wider range of learning materials and communication tools
- Acted as a digital repository for learners' work
- Enhanced presentation of learners' school work
- Time-saving
- Made progress and attainment more obvious
- Supported pastoral and social needs and curriculum outcomes
- Engaged previously under-achieving learners
- Enabled whole-class development and conflict resolution within groups of learners
- Promoted democratic learner participation
- Increased learner peer interaction
- Gave voice to individual learners
- Provided ownership of learning pathways
- Blended formal with informal learning

Teaching benefits – claims from the existing literature

- Supported innovative approaches to teaching
- Enabled approaches to teaching that are otherwise not considered feasible
- Provided easier access to learning resources
- Allowed easy tracking of learners' work
- Supported teachers' work with learners and collaboration with colleagues

Management benefits – claims from the existing literature

- Increased efficiency of achieving objectives.
- Offered access to up-to-date management and leadership information.

- Improved attendance levels.
- Positive impact on behaviour.
- Enabled improved data analysis and identification of the school community needs.

Family/parental benefits – claims from the existing literature

- Provided parental access to materials.
- Increased school-home communication.
- Schools responded more rapidly to parental enquiries.
- Promoted parental involvement.
- Increased 'closeness' between parents and children.

4 Overview of learning platform use across the case study schools

Having conducted the review of previous literature and expert consultation, the second phase of the research concentrated on investigating learning platform use in the 12 case study schools. The research revealed that the effective use of learning platform technologies was clearly taking different forms in different schools. This section of the report presents a brief overview of the implementation, adoption and use of learning platform technologies in the case study schools, before considering the benefits arising from this use in more detail in Section 5.

4.1 The form of learning platform provision across the case study schools

One of the criteria for the eventual selection of the case-study schools was the use of different learning platform technologies across the sample. As such, the sample schools were using all of the major commercial and Open Source learning platform applications available to UK schools at the time of the project. Some schools were making use of all-in-one packages of applications, while others used a self-chosen combination of VLE tools, management information systems and communication applications. One school was using a self-developed suite of Open-Source applications and various Web 2.0 tools to enable blogging, podcasting and video conferencing.

In addition to a range of learning platform technologies, the configuration of these technologies differed from school to school. Some schools were using their learning platform packages in an 'off-the-shelf' manner – although all had made decisions relating to the customisation of the design and style of web pages and applications. Some schools were using learning platform technologies in a more 'bespoke' manner – often using different forms of online platform for different functions. For example, a number of schools had 'internal facing' websites which acted as intranets for within

school use accompanied by 'external facing' websites – most commonly for parent and community use.

4.2 The nature of schools' implementation of learning platform technologies

It is important to note that the current use of learning platforms in all 12 case study schools was based on a rich history of previous ICT use and development. All of these schools had seen their learning platform technologies develop over time. These were schools that were all noticeably committed to the general use of ICT throughout their management, teaching and learning activities. ICT was often a key aspect of the schools' formal development policies and financial planning. As such, the present use of learning platforms needs to be understood as one element of a well-established culture of ICT development across the 12 schools. Indeed, the headteacher of one school described the learning platform as marking the culmination and 'turning point' of its past ten years of implementing ICT across the school – indicating entry into a 'new phase' of technology use and support.

The integrated use of learning platform technologies in each of the 12 schools had evolved from schools' separate use of various learning technologies over the last ten years or so – in particular email and MIS, diary and calendar applications, school networks, intranets, school websites and stand-alone managed learning environments. For some schools the 'journey' to their current use of learning platform technologies had been relatively straightforward – often decided by local authorities or, for some primary schools, through school clusters. In these cases, schools had switched over to the pre-designated learning platform, and had then (re)configured and 'customised' these applications in light of their prior uses of ICT.

Some of the case study schools had put themselves forward to be pilot sites for the local authority adoption of a learning platform – eager to gain early experience of the technology. Other more 'e-confident' secondary schools had developed a good knowledge of the learning platform marketplace (sometimes through contact with Becta and visits to the BETT show), and then made an informed decision to invest in their own systems. These schools were clearly already confident procurers of ICT products, and had considered a variety of learning platform providers. Two of the schools in the case study sample had switched providers and/or products, as they gained experience of how the applications fitted with their needs, with one school on its fourth iteration of a learning platform.

Once the schools had implemented their learning platform technologies, the journey to encouraging whole-school use of the learning platform was generally described in terms of being an 'organic', 'incremental', 'cascaded' and 'demand-led' process. Most of the participating schools had identified one specific initial 'route in' to capturing staff interest in the learning platform. In one secondary school this was data management and learner information tracking, in one primary school it was

calendar and diary management. From these initial uses, school leaders and managers had then overseen a gradual diffusion of learning platform use across other areas of school management, learning and teaching activities.

Alongside the provision of formal training for staff, whole-school presentations and meetings, most schools had also been careful to cultivate an informal 'demand' for learning platform use amongst their staff, administrators and learners. Some schools had employed specific staff to oversee the rollout of the learning platform (such as e-learning consultants or full-time 'multimedia technicians'), whereas others had taken a whole-school approach to involving existing staff. Indeed, most schools had deliberately devolved responsibility and developed a sense of shared ownership for the learning platform between different individuals and different sections of the school community.

4.3   The nature of schools' uses of the learning platform technologies

In all of the case study schools, learning platform technologies now provided a key context for the use of ICT throughout the school. In some schools the learning platform was viewed as a portal that 'brings everything together in one place' as one headteacher put it – with many teachers and learners making use of all ICT applications and tools through the learning platform. Schools seemed to have developed their uses of the learning platforms in a largely 'bottom-up' fashion – so that all 12 schools had developed distinct uses of the learning platforms in the areas of management/leadership, teaching, learning and parents/families.

4.3.1   Schools' use of learning platform technologies for leadership and management

The schools were making use of the learning platform technologies to support a number of leadership and management roles – notably the integrated and shared use of information management and communication activities. Leaders and managers in most of the case study schools had placed great emphasis on collecting, tracking and monitoring the performance of learners in terms of assessment, behaviour and attendance. While some schools had employed data managers, generally information was being shared throughout school management and teaching staff. In all cases data collected and collated through the learning platforms was being used to inform school planning and management decision-making. In terms of data-driven planning, some schools were using the learning platforms to monitor assessment over time at whole-school level.

Learning platforms were also being used in all of the case-study schools for school-wide communication of information with staff members, learners and parents. In this sense, school leaders and managers were using the learning platform to share a variety of materials and resources including policy documents, details of key objectives, assessments and assessment results, planning documents and policies,

e-safety documents and access to e-services for solving technical issues. Many schools were communicating notices to all staff simultaneously through their learning platform and through 'traditional' means such as notice boards and school diaries.

4.3.2 Schools' use of learning platform technologies for teaching

In terms of teaching, the learning platforms were being used for a variety of purposes – often involving the integration and sharing of individual teachers' activities across the whole school teaching community. For example, many class teachers and subject areas had chosen to maintain sites where they could collate, share and present teaching resources and activities. These sites often contained links to resources, quizzes and revision materials, learner questionnaires and surveys, and information on timetabling and curriculum requirements. Some teachers were using the learning platforms to host video and audio podcasting to share learners' work and school activities. These resources were used in-class to support the differentiation of teaching activities for different groups of learners, as well as the enrichment of lessons through additional resources. Often these resources were shared across the school and between all members of staff.

Across schools, separate spaces were being created on the learning platforms to develop and support 'virtual communities' of teachers. In one school, for example, shared spaces were allowing separate subject areas and separate groups such as teaching assistants to communicate online, share resources and form online communities of practice. Teachers were also able to share information about learners, often allowing the tracking of learners' behaviour, attendance and performance between lessons and different areas of the curriculum.

4.3.3 Schools' use of learning platform technologies for learning

Much of the use of the learning platform technologies in the case study schools was focused on supporting and enhancing learning and the activities of learners. Across all twelve schools learners were making use of the learning platform for revision and accessing learning resources during lessons. Another major focus across the case study schools was the use of the learning platform to support learning outside school. Some teachers posted multiple batches of homework tasks through the learning platform, therefore enabling learners to work through homework as they wished throughout the week. Learners could complete and then send work to their teacher through 'drop-box' style facilities.

Some schools and teachers were using their learning platforms to support learners' self-assessment and peer-assessment through the use of surveys and open questions. Discussion forums, blogging and chat facilities were used in some cases to support learner discussion and dialogue with their teachers and peers, as well as to encourage self-reflection. Learners were engaging in collaborative work and discussions with other learners in an asynchronous manner both in class and outside

school. In some schools, the learning platforms were used to offer learners the opportunity to engage in discussion and dialogue in order to contribute to the wider life of the school such as sports teams and music groups. Learner councils and cross-curricular activities were also supported through the learning platforms.

4.3.4 Schools' use of learning platform technologies with parents and families

Learning platforms were also being used in all the case-study schools to ensure that parents were informed of school-related issues. The learning platform was most commonly used to share newsletters and information bulletins with parents, as well as to convey important messages regarding specific activities or developments. Some schools were using the learning platform to share recordings of school activities with parents (class presentations, assemblies and school trips, for example). These information flows generally took a one-way 'broadcast' form – exemplified by one school's Parents TV channel that used video podcasts to provide information to parents. Learning platforms were also being used to 'stream' resources and information to parents and as a medium for showcasing work. Many schools were using the learning platforms to publish learners' work – sometimes in the form of scanned documents produced by learners, photos and videos from lessons, or through the replication of lesson plans. Learners could share these resources with their parents, thereby making school-based learning more 'visible' to the parent.

Some schools were using learning platforms to provide parents with messages with details of specific homework tasks. Some teachers set homework tasks on the learning platform that made use of discussion forums, blogs and other collaborative tools. Most of the case study schools were also using their learning platforms to provide parents with access to information about learners' attainment, attendance and behaviour. In particular, schools were importing attendance and behaviour data from the MIS and representing it in the learning platform in a more comprehensible way for parents. This often took the form of 'progress graphs', behaviour and achievement 'dashboards' and 'events systems' which monitored 'positive' and 'negative' behaviours in learner data sets.

4.4 Conclusion

Learning platforms must be seen as an extension of schools' continuing use of ICT over the last ten years or so. In many cases learning platform technologies were now a fully integrated part of schools' 'ICT cultures'. Further details of the schools' development and specific uses of the learning platform technologies are provided in the separate case study reports for each of the 12 schools. The next section of the report now considers the benefits that were identified.

5   Benefits identified from use of learning platforms

From the research activities conducted in the twelve school settings the project team was able to identify twelve distinct key areas of benefit arising from the effective use of learning platforms and associated technologies. Each of these areas of benefits was evident in at least three of the case study schools and is outlined in order of prevalence:

1   Improved organisation of information and communication across the school.
2   Increasing parental involvement and supporting learning at home.
3   Increased opportunities for independent and personalised learning.
4   Enhancing the accessibility, quality, relevance and range of learning resources.
5   Improved processes of monitoring and assessment for learning and teaching.
6   Increased opportunities for collaborative learning and interaction.
7   Enhancing digital resources.
8   Making best use of teachers' time.
9   Facilitating effective and strategic leadership and management of teaching.
10   Supporting additional educational needs and inclusion.
11   Improved management of student behaviour and attendance.
12   Building the school identity and community.

Each of these areas of benefit is now analysed in further detail. The descriptions also outline how each benefit was identified (that is, from observations of classroom use of the learning platform, or interviews with senior management teams, teachers, learners and parents).

Benefit 1: Improved organisation of information and communication across the school

The effective use of learning platforms was found to improve the organisation of information across a school between teachers, learners, school leaders and parents. Learning platforms can make a range of information quickly and easily accessible, including aggregating data and reporting to all staff, sharing school news as well as informing teachers, governors, learners and parents of rapidly changing events. Using the learning platform, the same information can be provided to different groups (staff or learners, for example) at the same time but in different formats. The learning platform therefore provides more personalised and flexible access to information.

In addition, the ease of uploading information onto the learning platform was found to enable a broad range of information to be provided, enabling teachers, governors,

parents and learners to select what they were interested in. Furthermore, the learning platform can support connections across different kinds of information, building links and supporting communication between staff with specialised knowledge. Staff can access and interact with documents that are circulated, amending and commenting directly on the documents, and also saving administrative time and effort. The processes of sharing information supported by learning platforms help to create new opportunities for communication between staff and parents and learners as well as school leaders and teachers. They can also support two-way information sharing and dialogue between these different stakeholders in the school community and can help to 'unlock' stakeholders from their own perspective to provide a bigger picture of the school.

Examples from the case study schools

Schools were seen to be developing their use of learning platforms to improve the organisation of information and communication in a range of ways outlined below.

Improved coordination of information and communication to improve the organisation of the school

Schools, especially large schools, can experience difficulties in coordinating information across the school with their learners, teaching staff, governors and parents. Schools can use learning platforms to help make sharing information and resources on a range of topics across the school easier including information on curriculum areas, tasks, homework, illness and weather. Examples of where the learning platform can support improved coordination of information resources include the following:

- A record and archive of information sent to specific groups (e.g. staff) is helping to ensure consistency and reduce duplication of information, and serving as a useful resource for communicating with parents, teachers and others, as well as report writing and review of school activities.
- Posting of information on new policies, curriculum changes, procedures and meetings is keeping staff, governors and others informed about what they might have missed
- The coordination and planning of timetabling decisions is more effective, including playground rotas, teacher cover and staff illness, new events, and visitors to the school, where calendars on the learning platform provide a dynamic working timetable. This is a flexible and responsive tool that makes visible any timetabling problems for staff so they may be resolved more easily.
- A more systematic flow of information to different stakeholders is being achieved. In some schools, the learning platform is gradually becoming a one-stop shop with a shift towards a paperless community for the school.

Improved communication and organisation of learning between teachers and learners

The learning platform has a positive impact on how, and when, teachers and learners communicate, as well as what they communicate about. The ease of communication and the distance afforded by the learning platforms, along with the potentially more private character of online communication, can have a positive affect on the relationships between teachers and learners. The learning platform also helps to improve the organisation of learning outside the classroom, and communication regarding homework tasks. Learners can provide information on their views and experiences that inform teachers' knowledge of their learners in ways that are useful for learning and support conversations. Examples from the case study schools include:

- teachers and learners having increased opportunities for individual and private conversation about sensitive issues that they cannot talk about in lessons
- learners having the opportunity and confidence to ask questions or communicate concerns about learning or sensitive issues such as bullying
- supporting ongoing communication between teachers and learners and enabling teachers to set up links for homework and providing online support at the point of difficulty
- learners having access to centralised resources to help organise their learning, homework or coursework. Teachers can also send alerts and reminders to learners, particularly dates for submission of work.
- learners' views and opinions being explored in ways that are not manageable in a classroom such as through the use of surveys, digital feedback on classes, or digital 'show and tell' sessions
- continuity of learning being provided by enabling teachers to send worksheets and feedback to learners who are unable to attend school or by enabling cover teachers to communicate with other teaching staff.

Improved communication and information sharing between teachers

- The learning platform can enhance the process of settling into the school, as new teachers and others can access the school policies and documents at any time needed, follow up on planning from previous years, get ideas for teaching, or find help.
- Links between primary and secondary school teachers are fostered, supported and maintained via transition or joint curriculum projects on the learning platform thus sharing data and portfolios between schools.
- Communication can be enhanced by supplementing or replacing traditional physical spaces with online areas on the learning platform. For example, a

virtual Staff Room can be located as a home page on the learning platform so it becomes part of the staff routine to check announcements.

- Teachers and specialist staff can communicate more easily with one another, especially when supporting learners with special educational needs.

Enhanced communication between leadership and administrators, teachers and governors

Using the learning platform as a centralised information and communication hub provides easy and immediate ways to enhance communication between school leaders, teachers, and governors. Benefits include:

- opportunities to hold virtual meetings rather than face-to-face ones that are difficult to arrange
- easier interaction for staff with documents online, so they can engage more fully in issues of planning, thus contributing to the smooth running of the school
- simpler ways for staff to report technical issues such as equipment not working as well as receiving information on action taken
- opportunities for closer engagement with school governors through online discussion forums, and collaborative work on policy via shared documents
- faster and more efficient dissemination of information to staff and governors about school policies and documents through centralised access, thus supporting governors in their work of monitoring the school.

Expanding opportunities for school-focused communication between learners

The learning platform can support learners communicating with one another to extend their friendships and support their learning. Examples include:

- the creation of online spaces for learners to meet with other learners, to expand opportunities for school-focused communication between learners, including the use of learner discussion forums for asking and answering questions on curriculum topics, and the use of social networking sites. One school working on World War I in History used social networking to send and share facts they found to the class group that supported learning conversations across the class. Another set up an online surgery on careers, prompting learners to ask and answer questions and offer advice.
- supporting conversations about learning through interest groups in order to help learners develop, maintain and extend their friendship across year groups.

What did the case study schools say?

From a leadership point of view teachers are taking ownership. Now everything is on board, and it shows on what date you have uploaded your planning. Your planning is open to the head, who can look at your planning. The literacy coordinator looks at your planning and says "Oh, I can put you to this website, go, and you can engage with your dyslexic children". [Deputy Headteacher]

I've been chasing up some assessments at the moment and making sure that they're all in the same place. And instead of having to go and see people, I can just pop a message on, 'Can you make sure these are loaded? Here is where you put it.' And it's just really straightforward, really easy, and makes people's lives easier. And it's easy to use as well. [Teacher]

It means that I can read that before a PTA meeting, glean any possible ideas, go back, get an answer … from the governors' point of view you can understand and keep updated, which, when you're working full time, is just making everybody's role far more proactive. [Parent governor]

It's also good to use the message board, because if something is a bit personal, like you don't want anyone else knowing, because sometimes when you ask the teacher there's people listening if the teacher is by other people, or something. So if you send a message then you know that it's just her listening. [Learner]

Conditions for success

The schools that were using the learning platform to encourage and enable improved organisation of information and communication across the school and school communities linked their success with a number of specific conditions for success being in place:

- **Establishing a close fit** between the added value of the learning platform technology for the organisation and communication of information to support pedagogy. This included making explicit the role of the learning platform in enabling communication for all stakeholders. The learning platform was also integrated into the role of information and communication within the school development plan.
- **Building a shared commitment** to get all staff using the learning platform for organising and communicating information across the school, including senior leadership, administrators, teachers, teaching assistants, as well as parents and learners and governors. This included establishing an appropriate sense of shared ownership and responsibility for the learning platform between the various stakeholders and ensuring that these stakeholders had reasons to access information and communicate via the learning platform.

- **Encouraging an inclusive ethos** of openness to information and ease of communication to support learners and parents to access the learning platform as a communication tool and information resource. This involved ensuring where possible that the direction of communication is two-way and providing a range of styles of communication. Spaces were also created that offer parents and learners autonomy and a voice on the learning platform.
- **Providing the administrative and technical support** and resources to support a rich information base to support dialogue. Careful consideration was also given to the shift from a private to public interface where communications are more transparent and may be open to misunderstanding.

Related benefits

Where schools were using their learning platform to improve information sharing and communications, this also led to benefits in other areas:

- Facilitating effective and strategic leadership and management of teaching.
- Improved management of learner behaviour and attendance.
- Improving the processes of monitoring and assessing learning.
- Making best use of teachers' time.

Key case studies

The following case studies illustrate the benefits in this area:

- Primary school 3
- Primary school 6
- Secondary school 1
- Secondary school 6.

Benefit 2: Parental involvement and supporting learning at home

Learning platforms were found to offer a number of ways to support learning at home and increase parental involvement. These include parents assisting children in their learning (most usually with homework), monitoring children's progress at school, ensuring school attendance, and having a greater involvement in day-to-day school activities.

Examples from the case study schools

Schools developed their use of learning platforms to increase parental involvement and support learning at home in a range of ways, outlined below.

Parents were more informed about their child

Most of the case study schools were using their learning platforms to provide parents with access to online information about learners' attainment, attendance and behaviour thus keeping parents more informed about their child. This information was being regularly provided to parents by school administration teams and class teachers. Examples included:

- parents using the learning platform to review and support their child's learning
- parents being provided with a focus for talking with children about their learning in school
- parents being helped to be involved in the setting of targets for their child's learning
- parents who are 'remote' from their children (those in the armed forces, working away from home, or parents who do not live with the child, for example) able to maintain contact with their child's progress at school.

Parents were more informed about the school

Many of the case study schools were using the learning platform to ensure parents were kept aware of school-related issues. The learning platform was used to share newsletters and information bulletins with parents, as well as important messages regarding specific activities or developments such as closures. Some schools used the learning platform to share recordings of school activities with parents such as presentations, assemblies and school trips. Examples included:

- parents being provided with important organisational and logistical information via the learning platform
- schools using the learning platform to showcase best practice and exceptional work to parents
- parents being consulted via the learning platform about important decision-making and policy development
- parental feelings of being involved in the day-to-day running of the school being enhanced
- parents being more able to maintain contact with school news and activities when away from home.

Learners were supported to continue learning at home

Another major focus in most case study schools was the use of the learning platform to support learning outside the school. Teachers sometimes set homework tasks on the learning platform that made use of discussion forums, blogs and other collaborative tools. Some teachers provided access to educational games specifically for parents to play with their child at home. Others posted homework tasks for a whole week or month through the learning platform so that learners could work through homework as they wished. Some schools regularly sent messages to parents with details of homework tasks. Examples included:

- homework tasks being made clearer to parents, enabling them to prompt and support their child's engagement with homework
- parents being provided with a clear focus to work with children at home
- learners being enabled to communicate with their teachers and other learners while working at home – often in an asynchronous manner
- homework tasks taking on a more active and collaborative form
- support for continuity of learning for learners with long-term illness, or cases of teacher absence or school closure in extreme weather.

What did the case study schools say?

It's lovely – you don't always get to know what they've been up to because they don't always tell you in that much detail. And when I looked… this week there were some photos on there of some of the work that the children have been doing, and that's really nice because as a parent, that's not normally an insight that you would get into the classroom, is it? [Parent]

We're just starting on the cusp of greater parental engagement. At the moment, we've got parental communication … they're seeing and enjoying what their children are doing. [Headteacher]

I want to see a parent having a window into their child's learning that they never saw before unless it was an open evening. I want a parent that can see that their child's just dipped over fractions … otherwise they cannot help them out until it comes to the end, and it's too late. [Teacher]

Conditions for success

The schools that used their learning platforms to increase parental involvement and support learning at home linked their success with a number of specific conditions for success being in place:

- **Recognition of varying levels of parental ICT skills**. Schools had taken care to set up their learning platforms in a way that could be easily accessed and used by parents. Some schools were using the learning platform as an impetus to run after-school ICT classes to 'train' parents in the basic skills needed to access and use the applications.
- **Building upon strong and well-established relationships with parents**. Schools where there was already a history of parental engagement and involvement were most successfully using learning platforms to realise this benefit. Learning platforms were proving to be an effective way of building upon pre-existing school/parent relationships and activities.
- **Developing clear guidelines about 'appropriate' use of the site with parents**. Many of the schools had found that encouraging high levels of parental engagement with the learning platform raised issues of e-safety and the need to clearly define the nature of 'appropriate' access. Although there are no single definite solutions to these issues, dialogue between schools and families lay at the heart of successful use. For example, some schools had worked with parents and governors to reach agreed sets of protocols and policies regarding acceptable use, parental consent for filming and recording of in-class group activities, and issues related to data protection and anonymity of data.

Related benefits

Where schools were using their learning platform to enhance parental engagement, this also led to benefits in other areas:

- Improved management of student behaviour and attendance
- Improved processes of monitoring and assessing learning
- Increased and improved organisation of information and communication
- Increased opportunities for independent and personalised learning.

Key case studies

The following case studies illustrate the benefits in this area:

- Primary school 1
- Primary school 2
- Primary school 3
- Secondary school 6.

Benefit 3: Increased opportunities for independent and personalised learning

The effective use of learning platforms was found to offer a number of ways to encourage and enable opportunities for learners' independent and personalised learning. Schools and teachers are increasingly expected to develop learner independence in young people and there is a recognition that there is no 'one-size-fits-all' curriculum and learners need support to work at their own pace and in their own style, while building shared skills such as team working and collaboration. Crucially, independent learning can take place in school as well as being extended into the home.

Examples from the case study schools

Schools were developing their use of learning platforms to increase learner opportunities for independent and personalised learning in a range of ways, outlined below:

Increased choice and diversity of learning resources

The effective use of learning platforms offered a flexible space for teachers and learners to share digital resources. In all case study schools, learning platforms were designed to offer open and safe spaces where classes and subject areas could provide links to especially created resources and external links. Both teachers and students were encouraged to upload resources. Learning platforms were being used to increase choice and diversity of learning resources, through:

- improved quality and range of resources available to learners
- teachers being able to provide access to a wider range of resources including videos and audio clips relating to class work and revision activities
- learners being able to choose learning materials they thought best suited their interests and needs
- learners having greater choice in how and when to engage with (and complete) schoolwork.

Widened access to learning resources

The ability to access the same learning platform content regardless of location enables learners to extend their engagement with learning beyond the classroom. Learners spoke of being able to access 'their' learning wherever they were. Learners were able to take ownership of learning, often becoming more engaged in learning activities and more willing to extend their learning beyond the classroom.

Learning platforms were used to widen access to learning resources, by:

- increasing opportunities for learners to access and explore the curriculum from home or as part of extension activities before, during and after school
- providing learners with 'anytime, any place' access to high-quality digital learning materials beyond the classroom
- fostering learner independence and confidence by giving them more autonomy and responsibility
- supporting personal study and self-directed reading through access to digital resources during lessons and in the school library.

Increasing the relevance of learning resources

Rather than being a static digital 'drop box' or repository, some schools were encouraging teachers, learners and parents to create their own content, therefore allowing the dynamic creation and recreation of learning resources. In this sense, learning platforms were being used to make learning resources more relevant because:

- teachers (and sometimes learners) were able to customise their own resource pages to fit the specific needs of learners
- sharing of learner-generated content in a range of languages was more easily supported.

Motivating and supporting independent learners

Some teachers and classes used the learning platforms to provide access to activities and applications designed to supplement and support direct engagement with curriculum materials. Learners and teachers were often encouraged to develop revision or quiz materials, and develop a supportive and motivating structure for independent learning. In particular, learning platforms were being used to:

- increase learners' motivation, enjoyment and enthusiasm for topics by providing a diverse range of learning resources
- support learner reflection, revision and preparation for examinations through the use of revision and quiz materials
- remind learners of course goals, thereby motivating learners to plan their learning.

What did the case study schools say?

I think it's absolutely brilliant, principally because I'm enabling the children to do very independent work by setting up very simple tasks for them to do. [Deputy Headteacher]

You can just go on there and do it yourself. ... So then you're learning all yourself, without your teacher's help. [Year 4 learner]

It encouraged her to take responsibility for herself ... before she was always relying on me to pick up a book and say, "Have you done this?". [Parent]

What were the conditions for success?

The schools that were using their learning platform to encourage and enable opportunities for learners' independent and personalised learning linked their success with a number of specific conditions for success being in place:

- **A clear commitment to encouraging whole-school 'open' use of the learning platform**: senior managers had created a culture of learning platform use that was 'open' rather than restricted. Senior leaders and ICT coordinators spoke of supporting a variety of different learning resources on their learning platform. Teachers were encouraged to develop and share online teaching resources through staff training and the building of a collaborative ethos within teams. Learners were trusted to make free and responsible use of the learning platform. This open use was expressed via formal school policies, or implicitly through staff training.
- **School control over the nature and design of the learning platform**: school leaders spoke of the importance of maintaining a level of control of the technical development and pedagogic design of the learning platform. As well as taking responsibility for the initial design of the learning platform

spaces, these schools had ensured that later adjustments and alterations could be made at any time. In particular schools were keen to encourage the personalisation and customising of resources by individual teachers and – in some cases – by learners.

- **Awareness of differences in home access to ICT**: the extension of independent learning beyond the classroom relied on ensuring easy access to ICT in and beyond the school. Schools had taken care to address potential lack of home access amongst learners. One school was working on ensuring good access to the learning platforms through subject lessons, another was exploring the use of internet 'dongle' devices that allow 'anytime any place' connection to the internet, while another school had developed a laptop loan scheme.

Related benefits

Where schools were using their learning platform to encourage learners' independent and personalised learning, this also led to benefits in other areas:

- Enhanced accessibility, quality, relevance and range of teaching and learning resources
- Improved management of student behaviour and attendance
- Increased and improved organisation of information and communication
- Increased interactive and collaborative learning
- Parental involvement and supporting learning at home
- Supporting additional educational needs and inclusion

Key case studies

The following case studies illustrate the benefits in this area:

- Secondary school 3
- Secondary school 5
- Primary school 2
- Primary 5.

Benefit 4: Enhancing the accessibility, quality, relevance and range of learning resources

Learning resources are an integral element of teaching and learning in schools. Teachers create their own resources as well as using a range of 'off-the-shelf' commercially produced products. All these resources must be made accessible to learners and, where possible be shared, re-purposed and reused by staff. The quality of resources is related to up-to-date content of the materials, relevance of resources for purpose and relevance to learners' needs and interests. Learning

platforms and related technologies were used to enhance the accessibility, relevance and range of learning resources in the participating schools.

Examples from the case study schools

Schools were developing their use of learning platforms to enhance the accessibility, relevance and range of learning resources in a range of ways, outlined below:

Supporting teacher access to resources to support the curriculum

Learning platforms in many schools are used as a 'one-stop shop' that is easy to organise and manage to gather resources through a resource bank/repository. The learning platform technologies can also provide teachers with access to advice and guidance on assessment and report writing, with recommended links and downloadable resources and links to software applications for creating online materials. Online education content services provided through the learning platform enable staff in many schools to create and find teaching material and to plan their teaching, both at school and at home, as well as providing support in the form of lesson observation sheets and lesson plan pro formas. In lessons, some teachers use a range of resources through the learning platform – for example, in geography for managing multiple websites, audiovisual resources and GIS simulators. The learning platform technologies offer learners an opportunity to access, use and manage resources to support their learning at school or elsewhere. This benefit can be realised through the learning platforms because:

- teachers can be supported by the learning platform to develop or adapt resources to local circumstances
- teachers can re-use and adapt their resources year on year
- teachers can be encouraged to share resources and collaborate, seek peer review and feedback, and get ideas from each other's practice
- easier access to a range of resources helps teachers to alter the pace and scope of lessons
- newly qualified teachers can get ideas for their teaching through the sharing of resources
- learners' revision process can be improved through access to past papers/exemplars.

Provision of a range of engaging, fun and motivating resources for learners

In many schools teachers utilise a range of interactive and audiovisual materials – video clips, podcasts, quizzes and online tests, for example – through the learning platform and this helps to make learning more engaging, fun and motivating. Resources created by staff can spark learners' imagination and interest. Effective use of the learning platform benefited learners because:

- learners with different learning styles could experience learning in different ways
- learning could be scaffolded and structured in a fun, engaging and motivating way
- learning could be accelerated through using imaginative, creative and inclusive resources.

Supporting learner involvement in creating resources

Learners can be encouraged to generate resources to be shared through the learning platform. Learners were involved in games design, and writing book reviews shared on the learning platform with the school community. In this way, the role of the learning platform was twofold: to provide a space for learners to publish and showcase their resources, and to allow learners to take ownership of the resources and the learning platform more generally. More specifically effective use of the learning platform supported:

- improved collaboration between learners and promotion of peer correction and assessment
- opportunities for learners to develop literacy, communication and presentation skills
- provision of opportunities for learners to work alongside professionals, through school partnership links or private companies
- enhancement of the link between school and family to encourage learners' reading and writing in the home
- links between home and school in order to blend formal and informal learning.

What did the case study schools say?

If you've got separate pages that you want certain children to access, you can upload games that might be differentiated for your higher ability children and your lower ability. So that there's a targeted game for them to play, so that you know that they're getting more out of the one that they're playing, rather than just logging on and playing whatever's on there. [Teacher]

We know, within the department, what everybody is doing… so you can share resources quite easily, and quite quickly, you can access other resources that people have uploaded… the speed of the access and the fact that you can all make sure that you are on the same page basically. [Teacher]

You know, we've had science departments that are videoing their own experiments, so that children can see an experiment that they've actually been part of. They can see it now either by going on to YouTube or logging on to our extranet … getting children involved in that creative procedure as well. So we've had girls doing sound

recording, girls doing videoing, girls doing the actual commentary, girls doing the experiment itself. You involve them in a process like that, in an audiovisual process like that, and it boosts their interest. [Teacher]

Probably the most useful thing is the Learning World [VLE] and the extranet where there are things like the links to other websites that help you learn. [Learner]

I think that they [parents] can see the real impact when they hear their child's voice on the video or they see them, they can link a bit more to it…it's just an easier way to understand…it just hits them straight away, that when they see their child's face on that video "Oh, that's what they've been learning". And it's a good conversation topic and might it engage conversation and take learning further at home also than maybe a piece of writing would. But they've each got their place and importance in learning. [Teacher]

Conditions for success

The schools that were using their learning platforms to enhance the accessibility, relevance and range of learning resources linked their success with a number of specific conditions being in place:

- **Building on teachers' existing skills:** familiar software tools were used by teachers to generate resources to populate the learning platform. Many acknowledged that initially it may be hard work but in the long term their workload is eased and it becomes not only manageable but also useful in terms of adaptability and flexibility of resources. In addition, using resources and tools that are familiar to learners enables them to easily organise, manage and use these resources.
- **A stepped approach to the use of the learning platforms**: the development of resources was not compulsory for all the staff. Rather, consideration of the teachers' varied ICT skills led to different paces of adoption and use of the learning platform in relation to resources at school-wide level. Implementation was thus seen as an organic process. Senior leaders in these schools acknowledged that change requires a process of development over time and that staff have different needs and levels of maturity There was also an awareness that the preparation of resources and multi-tasking in and around their use in the class may require new ways of thinking about classroom practice.
- **Use of a user-friendly structure for the resources/templates**: in some schools the role of an e-learning facilitator (or ICT coordinator/e-learning manager) provided structure to the learning platform use and helped all staff to learn to use it for uploading and managing resources. For example, all subjects were organised in the same way, and the use of templates and examples was key to enabling staff to realise this benefit.

- **Providing staff and learners the opportunity to contribute to the development of the learning platform**: developing a system that is inclusive was an important aspect of the implementation that allowed everyone to share the school vision and to contribute to the development and use of resources.
- **Provision of training:** differentiated training, addressing the needs of groups of staff, and training that took various forms (workshops, open-door sessions, and help sheets with screenshots on the learning platform) was helpful for teachers to start using the platform and making resources.

Related benefits

The schools that were using their learning platforms to enhance the accessibility, relevance and range of learning resources also found benefits in other areas:

- Increased interactive and collaborative learning
- Increased opportunities for independent and personalised learning
- Parental involvement and supporting learning at home
- Enhancing digital literacies
- Increased and improved organisation and communication of information
- Support for additional educational needs and inclusion
- Making best use of teacher time

Key case studies

The following case studies illustrate the benefits in this area:

- Secondary school 1
- Secondary school 3
- Secondary school 5
- Primary school 3
- Primary school 6
- Primary school 4
- Primary school 1.

Benefit 5: Improved processes of monitoring and assessment for learning and teaching

The effective use of learning platforms offered a number of ways to improve processes of monitoring and assessing learning. Schools can use the learning platform to collect systematic assessment data, monitor learner progress, and use this data to support assessment judgements – summative and formative and assessment for learning – and plan interventions. The platform can also be used to increase opportunities for learner self-assessment and peer review. Learning platforms can support assessment planning across the whole curriculum and provide support to senior managers and teachers, and in some cases learners, to engage with processes of seeking and interpreting evidence in order to support effective target setting and to support interventions. They can also help to support a more coordinated approach to monitoring and assessment and support increased feedback to parents. More generally, a whole-school focus on assessment opportunities facilitated by the learning platform can lead to increased support for assessment for learning and increased dialogue (with respect to learner voice and learning conversations).

Examples from the case study schools

Schools were seen to be developing their use of learning platforms to improve processes of monitoring and assessment for learning and teaching in a range of ways outlined below:

Increased opportunities for learner self-assessment and peer review

Assessment for learning, supported by opportunities for self and peer review, is built on the understanding that learners achieve most when they understand what they are trying to learn, are given feedback about their work that enables them to improve it, and are involved in the process of learning and assessment. The learning platform can be used to help provide opportunities for learners to reflect on their learning, give immediate feedback and options for action, to understand how their learning progresses over time, and to give learners a degree of ownership over their targets. This includes:

- support for learner reflection on their learning by recording and uploading learners' work (for example, audio files of students talking in French enable them to listen to themselves speak and hear their accent)
- provision of instant feedback to learners through the use of auto-scoring computer quizzes or teacher online feedback
- provision of opportunities for peer-assessment to support learners in giving effective feedback; in particular, the learning platform was noted by some to create a 'distancing effect' which enabled learners to give feedback more easily to their peers

- providing support to learners by enabling them to see, assess, and value their progress over time by giving access to archives of their work
- supporting learners in setting their learning goals by making their learning visible to them
- providing learners with data to enable them to review their targets, and find out what they need to focus on; for example, learners can be ranked using a traffic-light system in relation to their targets across the school year
- helping learners and teachers to easily exchange messages at a range of times, through commentary boxes and audio notes.

Broadened forms of assessment and feedback

The learning platform supports a range of forms of assessment including opportunities for teachers to provide feedback in the form of tracked changes, for teachers and learners to review video recordings of classroom activity, to use audio files in language lessons and for the assessment of speaking and listening, and for automated feedback via quizzes. The learning platform can speed the process of assessment and in turn support enhanced dialogue between teachers and learners. Examples included:

- using video recordings uploaded onto the learning platform so that learners in a dance class could review their performance and improve on it
- creating permanent and shareable records of assessment and achievement (or 'praise podcasts') by taking comments from teachers and recording them as an audio file for learners to revisit and share with their family
- learners receiving immediate feedback either through the system itself through games and quizzes, and teachers adding audio or 'track change' comments on learners' work, thus enhancing traditional ways of assessment
- teachers marking work online and automatically emailing it back to learners with a grade and comments, opening up a dialogue between learner and teacher around specific homework tasks.

Helping teachers to set effective targets

The learning platform can be used to collate, monitor and analyse a wide range of data from across the school. This supports teachers in setting and reviewing targets and identifying patterns in learners' work in the classroom and beyond the school. The increased analysis of data then helps teachers and school leaders to undertake more refined and fine-tuned targeting which can then support effective interventions with learners.

Examples include:

- the use of online questionnaires and automatic collation of learners' responses onto a spreadsheet, to help teachers see what learners do and do not understand
- teacher access to a richer core database that includes a broad range of data over a longer period of time, to support their own monitoring and tracking to inform their teaching
- improved differentiation of learner targets based on systematic collecting, tracking and monitoring of learners' progress on the basis of their scores. Learner groups can be created based on this data, targeted interventions designed, and work towards progress can be monitored.
- a more refined and accurate process of monitoring and target setting which enhances the setting of meaningful targets that are responsive to learner actions and can be reviewed more frequently and revised.

Effective use of information to identify pupils who need additional support

The learning platform provides a centralised hub of information to support coordination between teachers, heads of department and the school leadership. This shared information can help to engage all staff in the process of monitoring learner progress. The collection, analysis and sharing of this information enables school leaders and senior managers to identify patterns in learners' work. This can support staff to extend learning outside the school and provide additional support to those learners who need it, including gifted and talented learners, and those with special needs. The platform can be used to:

- increase analysis of the learner data collected which supports dialogue on why learning targets are (or are not) being met. The constant reflection on performance enables staff and learners to consider what has been effective and what has not.
- produce a coherent whole-school view of a learner and help to reduce the fragmentation of data that can occur, especially in a large school
- provide school leaders with access to rich and streamlined local data that can help to connect school leadership (many of whom often cannot get into the classroom as often as they want) with the life of the classroom
- monitor learner activity, for instance, how often learners log on and what times of the day they are logging on
- provide senior managers and teachers, as well as parents and learners, with access to a portfolio of monitoring and assessment data and evidence to support conversations.

What did the case study schools say?

Assessment – assessment for learning, knowing your learners, being aware of learners' data, what pupils' needs are – this is now all available at the touch of a button. We've always had that data available, but it was in about nine different places, which became time-consuming, laborious, and tedious at times, and also frustrating. What we've now done is collectively marry all that data together, pulling from the relevant sites and the relevant places – and got people talking. We started talking to people, and then looked... and then gave them the opportunity to plug in, and, and they did. And we know it's not perfect, but it's incredibly powerful. [Headteacher]

For parents to know what it is their child needs to do, how they're being assessed, and where they're up to, that's been probably the most significant bit of it all, because then they really understand what their child is trying to do to get to the next level within science. [Teacher]

One thing I really like which I found especially nice, on [the learning platform] you can access all your different lessons… so you can literally click on each individual bit and you can go on classes from this year and classes from last year, so you can look at stuff you've done over time... [Year 10 learner]

What were the conditions for success?

The schools that were using the learning platform to encourage and enable improved processes of monitoring and assessing for learning and teaching linked their success with a number of specific conditions being in place:

- **Building a shared commitment** to get all staff on board with using the learning platform for monitoring and assessment. This involved establishing an appropriate sense of shared ownership and responsibility for the learning platform between various stakeholders at each school (teachers, learners, managers, parents and the school community) including a responsibility for updating and connecting with the information.
- **Showing the power of monitoring and assessment data by providing systems that are clear**, **easy to use and user friendly** to track attainment and inform target setting. This means creating data systems that support the demands on teachers, and help to ease their workload, such as reporting to parents and discussing work with learners.
- **An ethos of sharing data** with parents and learners where appropriate in order to support parents' involvement with learning at home. This involved constantly reviewing targets that are meaningful to learners and parents – and giving responsibility for learning to learners and parents where appropriate.

- **Experimenting** with a range of forms of assessment and feedback including the use of visual and video-based assessment, and peer assessment.

Related benefits

The schools that were using their learning platforms to support monitoring and assessment also found benefits in other areas:

- Enhancing the accessibility, quality, relevance and range of teaching and learning resources
- Facilitating effective and strategic leadership and management of teaching
- Improved management of learner behaviour and attendance
- Increased and improved organisation of information and communication
- Increased opportunities for independent and personalised learning
- Making best use of teacher time
- Parental involvement and supporting learning at home

Key case studies

The following case studies illustrate the benefits in this area:

- Secondary school 2
- Secondary school 3
- Secondary school 6
- Primary school 1
- Primary 5.

Benefit 6: Increased opportunities for collaborative learning and interaction

Learning platforms were found to support collaborative learning and interaction between schools, teachers and learners. The opportunities to collaborate and work on shared documents helps learners or teachers to work together to solve problems, whether in pairs or small groups, and puts a focus on the design of curriculum-based interactive experiences. The digital tools facilitated by learning platforms, including blogs, wikis and discussion boards, can be marshalled to provide a collaborative environment to enliven and enrich the learning process and create social contexts for learning.

Examples from the case study schools

Schools were seen to be developing their use of learning platforms to increase opportunities for collaborative learning and interaction in a number of ways, outlined below:

Increased collaboration between teachers and schools to pool resources and expertise

Learning platforms were used to connect school leaders, teachers and learners across schools, and to connect primary and secondary schools, as well as clusters of schools, to form school communities in areas. Schools collaborated to exchange ideas and showcase new technologies and teachers worked as a team to create resources, amending each other's resources, or developing team resources to share. The learning platform provided a space for teachers and learners to pool resources, ideas and expertise in the following ways:

- Transition between schools was supported by relationships between primary and secondary schools through the sharing of expertise and technology equipment. Schools collaborated by providing hands-on support areas on the learning platform, showcasing new technology such as the use of GPS trackers for learning.
- The development of a shared space on the learning platform enabled school leaders, teachers, parents and learners in neighbouring schools to exchange thoughts on policies, ideas for implementation and the curriculum. This led to staff sharing the workload and developing links through working on particular areas of learning.
- Schools were able to collaborate with those in other countries to share language resources and experiences. One school, for example, is using the learning platform to connect with a Chinese school in the learning of Pinyin and English, and sharing resources on the teaching of design and Spanish. Another has a reading project with a school in Canada.
- The learning platform enabled teachers to form specialised groups to share expertise and resources, such as a French coordinators' group.

Enhancing collaboration between learners

Collaboration between learners included:

- opportunities to engage and learn across communities in one school cluster, such as learners working on a never-ending story using a wiki, as part of the current focus on writing. Another school took part in pioneering the use of audio broadcasting to support a range of cross-school collaborations on writing.
- using digital applications on the learning platform, such as Wallwisher software to generate debate on a topic, and preparation of digital presentations and videos to be uploaded on the learning platform to share with others
- opportunities to communicate through blogs and discussion boards, which helped learners to develop their abilities to think, discuss, argue, communicate and reason with one another, ask one another questions, identify choices and hone ideas. This contributed to developing a feeling of belonging to a learning community (either at community, school or class level).
- learners finding that the sense of distance that a learning platform can afford helped to support critique and difficult commentaries that face-to-face classroom interaction cannot support so easily.

What did the case study schools say?

We run training and projects for the 19 primary schools, so we have a hands-on support area as well and we usually showcase new technology, so we're doing GPS trackers at the moment. We share cluster equipment, so we have a booking area for cluster equipment. [Headteacher]

On the cluster level we've got a never-ending story wiki … we've done this across the participating schools in the cluster. The beauty about that is we've gone from year to year, from KS1 and KS2 vertically, and they've done a creative writing piece on a never-ending story. Six schools have chosen to participate… [E-learning coordinator]

[Working together] you can learn what your friend knows as well. [Year 4 learner]

What were the conditions for success?

The schools that used the learning platform to encourage and enable opportunities for collaborative learning and interaction linked their success with a number of specific conditions being in place:

- **A commitment to the school as part of a community** and the value of sharing and pooling resources, building links with other schools and specialist groups through project-based work.
- **A strong school ethos on learner-centred and collaborative learning** in which the development of the learning platform was seen as part of the wider technology strategy of the school and learners were given opportunities to reflect and engage with learning as a process through their work.
- **A whole-school ethos on e-safety** as teaching learners effective and appropriate communication online, and giving learners opportunities to collaborate in online environments safely. This included providing parents with training on e-safety and reassurance on school policy.

Related benefits

The schools that used the learning platform to encourage and enable opportunities for collaborative learning and interaction also saw benefits in other areas:

- Digital literacies
- Accessibility, quality, relevance and range of teaching and learning resources
- Independent and personalised learning.

Key case studies

The following case studies illustrate the benefits in this area:

- Secondary school 1
- Secondary school 3
- Primary school 1
- Primary school 2.

Benefit 7: Enhancing digital literacies

The effective use of learning platforms offered a number of ways to enhance learners' digital literacies – their ability to make the best use of digital technologies, and to participate fully and safely in digital environments. Digital literacies take a number of forms – the functional skills required to make effective use of computers and the internet; the ability to analyse and evaluate digital content; the knowledge of how to remain safe online; and the ability to judge when and how to use technology.

Examples from the case study schools

Developing learners' functional technology skills

Learning platforms were used as a framework for learners' engagement with various digital applications, including developing learners' knowledge about digital technology and enhancing their skills to use digital technology effectively. Teachers reviewed how learners were making use of different applications, and offered advice on what they could do differently. Learning platforms were used to allow learners to engage with unfamiliar Web 2.0 applications such as Twitter and wikis within a bounded and monitored space. This allowed learners to develop their confidence of using these applications within the safety of the learning platform. As a result:

- learners developed further competence in technologies they were already familiar with
- learners engaged with and developed their confidence in using unfamiliar technologies in a safe and monitored environment
- learners were enabled to develop their online collaboration skills and gained experience of working in online communities
- learners were encouraged to discuss and develop 'e-etiquette' skills to support working with others online.

Developing learners' critical thinking about digital technology

The effective use of learning platforms provided learners with a flexible space for them to look back on their own use of applications, and to review how these applications were being used. Learners could also critically question their decision-making with regard to using digital technology. Learning platforms were used to enhance learners' ability to stay safe online by providing them with opportunities to make appropriate and informed decisions about their use of technology. For example, including learners in the setting up of class spaces on the learning platform encouraged their active involvement in considering matters of privacy, identity and appropriate use.

In this sense, learning platforms supported learners in the following ways:

- teachers were able to initiate discussion with learners about online safety
- learners were provided with opportunities to review and reflect upon their use of digital technology.

What did the case study schools say?

Their ICT skills generally have improved a massive amount since having the learning platform, just being able to generally be competent at using a computer, not just the learning platform but them transferring those skills into other things as well. So that's been a massive success. [Headteacher]

You can pinpoint a child to a website by a click, instead of them having to trawl through a log-on to search, Google, or whatever, first – it's a very safe environment. [Deputy head]

I think they're improving their ICT skills without really realising that they're doing it. So you're kind of killing two birds with one stone. And the way that the learning platform works, it is, in some ways, quite similar to various other operating systems ... You know, the way that you attach something if you're sending an email is very similar to how you'd do it in Hotmail or Google mail or something like that. So they're learning skills that they can apply outside of school as well. [Leadership team]

Conditions for success

The schools that were using their learning platforms to enhance learners' digital literacies linked their success with specific conditions being in place:

- **High levels of teacher dedication to maintaining and monitoring learning platform spaces**. All of these benefits were described as requiring a large amount of teacher time and effort in ensuring that opportunities existed for digital literacy development. Learning platforms seemed to help the development of learner digital literacies most as the result of deliberate teacher efforts rather than an automatic consequence.
- **High levels of teacher awareness of e-safety being a whole-school issue**. This was especially the case in ensuring that the learning platform offers learners a safe and secure environment to engage with Web 2.0 applications.

Related benefits

Where schools were using their learning platforms to enhance learners' digital literacies, this also led to benefits in other areas:

- Management of student behaviour and attendance
- Interactive and collaborative learning.

Key case studies

The following case studies illustrate the benefits in this area:

- Secondary school 1
- Secondary school 5
- Primary school 2
- Primary school 4.

Benefit 8: Making best use of teachers' time

The effective use of learning platforms offered a number of ways to help teachers make better use of their time. The successful management of teaching, learning and pastoral activity requires that teachers communicate effectively with learners, colleagues and parents. They need to demonstrate a flexible, adaptable and organised approach to management of resources and information. Learning platform technologies supported the effective use of teachers' time by providing facilities for storing, managing and sharing resources; communication with learners, colleagues and parents; and tools with which to record and access data to monitor, track and report on learner progress. Crucially, these technologies allowed teachers greater control over the time and place in which these activities are managed.

Examples from the case study schools

Schools were seen to be developing their use of learning platforms to facilitate effective use of teachers' time in a range of ways, outlined below:

Increased efficiency in communication and collaboration

Effective use of learning platforms was achieved through replacing traditional, paper based ways of communication with the use of tools on the learning platforms. This enabled teachers to communicate with colleagues and learners both more easily and more quickly. Many schools used the learning platform to host virtual staff rooms, notice boards with announcements, and briefing sheets. In some schools the learning platform provided a forum for shared planning, supporting teachers in sharing resources.

Enhanced opportunities for flexible working

Having access to the learning platform from anywhere in school, and from home too, provided teachers with greater flexibility in where, and how, they carried out administrative tasks and curriculum planning. This also provided a sense of continuity of access across time and context. The learning platforms were being used to enhance opportunities for flexible working by:

- enabling teachers to access data and other materials from home
- enabling teachers to upload teaching materials from home
- providing opportunities to adapt materials immediately in response to learner feedback
- facilitating planning in 'downtime' (early morning, after school, evenings, weekends, holidays).

Effective management and organisation of resources

All the case study schools were using the learning platform as a space for teachers and learners to access, upload and share resources. This gave teachers immediate access to learners' work and an immediate overview of their online activity as well as a forum for feedback. It also encouraged sharing of resources and ideas and a reduction in the use of paper materials. Ongoing development of online repositories by teachers is generating an extensive resource bank over time and encourages teachers to adapt and reuse materials. In this sense, learning platforms were being used to:

- reduce the time spent photocopying and collating paper materials
- facilitate the sharing of resources and making planning easier
- help teachers manage learners' homework activity more easily and quickly
- help teachers to adapt and reuse existing materials.

What did the case study schools say?

When you're in senior management you don't get two minutes to do anything during the day and it will just build up and build up. Now I can go home and sit down quietly and get on with school stuff because the VLE makes life much easier. [Deputy head, secondary school]

Students can find some help on the extranet where I have put what I call 'learning mats' which is just key vocabulary to help them improve – more opinions, more connectives and possibly vocabulary that I don't have time to teach all the time. [Teacher, secondary school]

You can look at previous years' planning; it just makes life a lot easier because everything's in a central place, it's easy to access. [Teacher, primary school]

It's the communication between staff. We don't have to actively go and seek somebody out. We can upload things that could be useful to everyone onto the learning platform and then everyone can log on and access it in their own time. [Teacher, primary school]

What were the conditions for success?

Schools that were using their learning platform to facilitate effective use of teachers' time linked their success with a number of specific conditions being in place:

- **Whole-school vision for use of learning platform:** senior management framed the learning platform as the key communication centre for many of the case study schools. Items such as paper calendars, diaries and notices were put online to encourage teachers (and all staff) to use the learning platform as a first port of call. Putting the learning platform at the

heart of the learning community was a strategic vision that saved teachers' time by bringing everyone on board on equal terms.

- **Staff support and training:** staff were provided with stepped levels of support to enable them to use the learning platform effectively for a range of uses. Training was given in special workshops and, in some schools, was incorporated in each staff meeting. Teachers frequently offered each other peer support. Effective use of teacher time was promoted by providing teachers with training initiatives that best met their initial needs. These were activities relating to planning, monitoring and assessing learning, accessing and using learner data, and developing lesson resources. In a majority of the case study schools an e-learning/ICT coordinator supported these staged activities.

- **Relevance of, and access to, suitable tools**: teachers were introduced to, and supported in the use of, tools that facilitated their everyday activities (for example, access to learner data and an integrated communication portal). In addition, the availability of a suite of online tools within the learning platform and support in using these to design learning resources encouraged take-up of the learning platform amongst teachers.

Related benefits

Where schools were using their learning platform to facilitate effective use of teachers' time, this led to benefits in other areas:

- Accessibility, quality, relevance and range of teaching and learning resources
- Leadership and management of teaching
- Monitoring and assessment of learning
- Organisation of information and communication
- Independent and personalised learning
- Parental involvement and supporting learning at home.

Key case studies

The following case studies illustrate the benefits in this area:

- Primary school 6
- Primary school 2
- Secondary school 6
- Secondary school 2.

Benefit 9: Facilitating effective and strategic leadership and management of teaching

The effective use of learning platforms offers a number of ways to support and enhance strategic leadership and management. The success of any school is grounded in effective leadership and management by head teachers, school managers and other senior members of staff and involves providing a vision, strategic goals, and direction for the ethos, and development of the school. Digital technologies have long been associated with the effective leadership and management of schools – especially in terms of communicating information, coordinating, monitoring and assessing teaching, and sharing and implementing school-wide goals and strategies. This section describes the ways in which the schools in the research project were using learning platform technologies to realise this benefit.

Examples from the case study schools

Schools were seen to be developing their use of learning platforms to facilitate effective and strategic leadership and management of teaching in a range of ways, outlined below.

Enhancing communication of information and goals between teaching staff, management and leadership

Effective use of learning platforms allows school leaders and managers to communicate with teaching staff on an easier and more comprehensive basis. In many of the case study schools the learning platform hosts virtual staff rooms, notice boards with announcements, briefing sheets and other information, and integrated 'email shots'. In some schools the learning platform provides communal access to calendars, tools for room booking and timetabling. More specifically effective use of the learning platform can mean:

- important information is more easily communicated to staff
- every teacher is able to take responsibility for keeping up to date and informed
- cost and time savings can be made regarding the resources used for offline communication.

Better coordination of tracking and analysis of school data

Senior managers in many of the case study schools used the learning platform to track and analyse data regarding learner registration, attendance, behaviour and assessment. In some schools teachers had responsibility for inputting data in the system while whole-school analysis was conducted by a data management expert. The learning platform also provided space for a shared forum for staff discussion of learner data. More specifically effective use of the learning platform can mean:

- senior managers are able to follow up on teachers' work and identify problematic areas more effectively
- teachers are provided with more opportunities to reflect on data relating to their work
- school leaders and managers can share data more easily with parents and teachers within the school, and with outside agencies such as Ofsted
- all school staff can develop a sense of shared ownership and responsibility for school data.

Enhanced monitoring and managing of teaching

Learning platforms can provide a space for teachers to upload their planning and to write reports for learners collaboratively, as well as sharing and updating key objectives and goals. Documents can be edited directly on the learning platform by school managers and teaching staff. Senior managers can use the learning platform to support performance management – especially through online planners and planning templates. More specifically effective use of the learning platform can mean:

- increased transparency of planning across the school and accountability of teachers to all other staff members
- greater involvement of all stakeholders in the process of school planning
- opportunities for school leaders and managers to engage in planning remotely and during out-of-school-hours
- earlier identification of learners who require support, and improved target setting.

What did the case study schools say?

People come in here all the time from outside and they say to me 'How is your Year 6 doing?' or 'Can you tell me what percentage of children in Year 4 are expected to get Level 4s?' ... Well, before I would have been scrabbling around ... and now I just say, 'Yeah, if you'd like to come over to the computer, I'll show you the tracking'. With the learning platform it's transparent – it's all about transparency. [Deputy head]

We are working towards shared goals and people now know what that would look like because they have the level descriptors there. We can look where the gaps are and actually have whole-school strategic goals based on this analysis. [Deputy head]

One of the most odious tasks of a leader is to ensure that all the staff are meeting the deadlines. Before the learning platform everyone was blaming someone else. Now everyone is on board … From a leadership point of view all the planning is now on board. Teachers are taking ownership. [Headteacher]

It just makes your life much easier because I am not chasing around teachers for planning because now it's all on the learning platform. [Teacher]

It's a very useful management tool, the learning platform, because so much information is stored on there. I can go on there and see teachers' planning very easily ... So, whereas I would have spent the whole day going to two or three teachers and having a look at this file and having a look at those books, now I can do it all online. It's streamlined an awful lot of things. [Leadership team]

What were the conditions for success?

The schools that were using their learning platforms to facilitate effective and strategic leadership and management linked their success with a number of specific conditions being in place:

- **Providing ample support to staff**: the senior management provided the resources and training to support staff to enable them to use the learning platform for tracking data and to upload their planning. Teachers were given time to do their planning and to discuss it with each other. On-the-spot support was available and the SMT appointed teacher enthusiasts who supported other staff. The role of an e-learning/ICT coordinator who also has links with the provider and other schools was useful in transferring suggestions for further development. All schools followed a staged approach towards implementation of the learning platform.
- **Replacing traditional ways of doing things with platform tools:** the senior management team made obsolete old ways of communication such as briefing sheets, the paper diary and the whiteboard in the staffroom, to push teachers to use the learning platform to find information and to communicate with them through this medium. Expectations were the same for everyone and leadership, teachers and support staff were involved in a shared journey.
- **Managing change:** in most schools, using the learning platform required changes that the school leaders and managers needed to manage. Setting expectations and being involved actively in the process was part of the senior management team role. Some schools had relied on a cascading

leadership model, where specific expertise was identified and provided for as part of this change management.

Related benefits

Where schools were using their learning platforms to facilitate effective and strategic leadership and management, this led to benefits in other areas:

- Parental involvement and support for learning at home
- Organisation and communication of information
- Making best use of teachers' time
- Building the school civic identity and community
- Management of learner behaviour and attendance
- Monitoring and assessment for learning and teaching

Key case studies

The following case studies illustrate the benefits in this area:

- Secondary school 1
- Secondary school 3
- Primary school 1
- Primary 5.

Benefit 10: Supporting additional educational needs and inclusion

The effective use of learning platforms was found to offer a number of ways to address learners' additional educational needs and inclusion. Schools aim to offer additional educational provision to learners who have greater difficulty (social, physical or learning) in learning than the majority of children the same age. Digital technologies have long been associated with the provision of 'inclusive' learning that increases the presence, participation and achievement of all learners. This section describes the ways in which the schools in the research project were using learning platform technologies to realise this benefit.

Examples from the case study schools

Schools were seen to be developing their use of learning platforms to address additional educational needs and inclusion in a range of ways, outlined below:

Enhancing provision for all learners

The effective use of learning platforms offered a flexible and more personalised space for schools to help learners to engage with learning and wider school life in ways that were appropriate for their particular needs and requirements. Schools were using learning platforms to provide a differentiated range of resources and

online content to support learners with additional needs. The range of communication tools supported by the learning platforms allowed learners in some case study schools to express themselves and interact with teachers and peers in non-verbal ways. Learning platforms were being used to enhance school provision for all learners in a number of ways:

- Schools paid close attention to ensuring that all learners were able to access information and resources in a way appropriate to their needs, to record their ideas and communicate.
- Some schools were using a range of tools, such as use of audio for learners with reading difficulties, story-writing for emergent writers, literacy and numeracy resources for under-achievers, and additional work for gifted and talented learners.
- Shy and socially unsure learners were provided with a space to voice their opinions and concerns in a way not available in the classroom.
- The learning platform was used to help learners who could not be in school to keep in touch with classmates and learning.

What did the case study schools say?

Stephen is one of our autistic boys who would not have stood up in front of the class and told you about things. But he uploaded lots of stuff onto the learning platform, because it was a medium he felt extremely comfortable with. So his peers, who wouldn't necessarily have the patience to wait for Stephen to tell them all about it, were able to see his strengths. So yes, that was really, really good. [Leadership team]

Sarah's got ME so for her the learning platform is just vital for keeping in touch with the progress of her studies. She's normally mentally alert by about half past four in the afternoon, other than that… you know, so it's very difficult for her to get into school, very, very difficult. So the learning platform is almost her distance-learning platform. She can do a bit of work at home … It's meant that discussions based around things in class she can enter into, so she can do something to feel a part of what's going on. [Parent]

If a child's got low self-esteem and they log on and they can see their picture with something really special that's happened, then they often do come back in and say, 'Oh, I saw my picture'. You can see that it really made them feel good about themselves. [Teacher]

Conditions for success

The schools that were using their learning platforms to address additional educational needs and inclusion linked their success with a number of specific conditions being in place:

- **Providing a diversity of learning resources on the learning platform**: schools and teachers had put considerable time and effort into maintaining awareness of the variety of online resources and content needed to fit the needs of their learners. This was described as an ongoing commitment that added to workload.
- **Reviewing all learning platform resources in terms of accessibility**: when choosing hardware and digital resources, schools and teachers had to ensure that they were accessible and did not exclude learners. Again, this was described as an ongoing commitment that added to workload.

Related benefits

Where schools were using their learning platforms to address additional educational needs and inclusion, this was leading to benefits in other areas:

- Accessibility, quality, relevance and range of teaching and learning resources
- Management of student behaviour and attendance
- Independent and personalised learning
- Parental involvement and supporting learning at home.

Key case studies

The following case studies illustrate the benefits in this area:

- Secondary school 1
- Primary school 1
- Primary school 3
- Primary 5.

Benefit 11: Improved management of learner behaviour and attendance

Encouraging learners' attendance at school and promoting positive behaviour for learning is a key priority for schools. There is a long history of using digital technologies to improve learner behaviour and attendance levels – in particular the use of electronic registration and behaviour management systems. The ways in which learning platforms and related technologies were being used in different schools to support the improved management of student behaviour and attendance are outlined below.

Examples from the case study schools

Enhanced recording and tracking of learner data

The learning platforms recorded and tracked data on learner behaviour and attendance. They also supported the effective collection, organisation and maintaining of data on learner behaviour and attendance. Learning platforms were used to record data from e-registrations, teacher recordings of positive and negative events in class, and other teacher interventions during the school day. This data was then shared between school leaders, managers and teachers to inform practice. This gave staff in some schools access to learner information from previous years and previous schools. More specifically effective use of the learning platform meant that:

- the ease of recording and collating of the details of behavioural incidents was increased
- schools were able to respond to behavioural incidents more quickly
- it was easier for schools to identify patterns of behaviour that informed further actions and interventions
- the monitoring process was made easier and faster with instant, any time, anywhere access to information by staff.

Enhanced communication and sharing of learner data

Learning platforms were used to enhance communication between teachers and parents about learner attendance and behaviour. Learning platforms were also being used to provide parents with access to data about their child's attendance and behaviour – often in the form of a personalised 'dashboard'. In some schools parents received notifications of non-attendance, behaviour incidents and detentions via text messaging and email. Other benefits included:

- the provision of greater transparency of processes and more robust information on learner attendance, attainment and behaviour
- the provision of evidence to support teachers in meeting parents to discuss their child's' behaviour
- more up-to-date information and evidence for parents to support parent–staff meetings and communications
- parents being better informed about their child's behaviour and attendance so they could intervene at an earlier stage.

What did the case study schools say?

There are definitely benefits in being able to monitor pupils' attendance, for example to be able to look for patterns in pupils' absence, not only in terms of attendance in school, but lesson by lesson attendance. [Deputy headteacher]

I have my computer on for parents' evenings, and I have the child's dashboard up, and it's got several tabs along – attendance, then it's got the A to Ds, progress chart, it's got their work they've submitted, or work due. That gives you a lot of information for parents' night. [Leadership team]

If something has come to my attention about a student – if their attendance is being questioned, if their lateness has been queried by somebody, or if somebody says, you know, they've been behaving badly, or something, then the learning platform is my port of call to grab all that information. [Teacher]

It's quite a powerful tool when you print it off for parents' evening and you put all the negative events in front of parents and they can have a look at what John's been up to. And it's kind of evidence. And then the student achievement leaders log as much as they can and when it comes to things like exclusions, looking at the negative side, there's the evidence there that this person has been constantly breaking school rules and constantly in trouble and it can be used quite effectively for that reason. But it's the same with rewards. You know, we want it to be very much more a positive focus, and kids get quite excited when they get positive events and so many positive events add up to, you know, rewards at the end of term. [Teacher]

My mum, she checked it, and like, my attendance. She can check anything that's on yours, so, say, if I was late one time, and she just wanted to see if I was late one time, and if I was in on time, then she could go on there and check if I was on time, or late… It probably means you change the way you do things actually… if you hurry up, or not, because you know your parents… You know, you go, 'Oh, yes, my parents, my mum can actually check. I better hurry up'. [Year 6 learner]

Conditions for success

The schools that were using their learning platforms to support improved management of student behaviour and attendance linked their success with a number of specific conditions being in place:

- **A general school-wide commitment to improving learner attendance and behaviour:** schools were keen to stress that improvements to behaviour or attendance were the result of a mix of the use of technology, people, pedagogy and ethos and could not be attributed solely to the learning platform.
- **Transparency and communication of the data** amongst various stakeholders (teachers, learners and parents) enabled the schools and families to take action and plan effective interventions to deal with learners' behaviour.

Related benefits

Where schools were using their learning platforms to support the improved management of student behaviour and attendance, this led to benefits in other areas:

- Monitoring and assessing learning
- Organisation of information and communication
- Parental involvement and support for learning at home
- Leadership and management of teaching

Key case studies

The following case studies illustrate the benefits in this area:

- Primary school 1
- Primary school 2
- Primary school 3
- Secondary school 6.

Benefit 12: Building the school identity and community

The effective use of learning platforms was found to offer a number of ways to build a school's sense of community and civic identity. As well as being sites of teaching and learning, schools obviously function as communities where the positive participation and responsible attitudes of all members are encouraged. Schools are also encouraged to develop a democratic ethos, in order to make visible the needs of learners and teachers, and 'active' citizenship amongst learners. This section describes the ways in which the schools in the research project were using their learning platform technologies to build the school's civic identity and community. Although relevant to all schools, this is particularly relevant to schools with a large or dispersed community in which the school may be one of many organisations within the community.

Examples from the case study schools

Schools developed their use of learning platforms to build the school civic identity and community in the range of ways, outlined below:

Enhancing student voice and school democracy

Schools used their learning platform to support a range of formal 'learner voice' processes at the level of the whole school. This included the use of school councils and other decision-making forums, as well as the formation of inter-school virtual communities. Some schools used the learning platform to showcase the work of the learner-led school council. Some school councils used the learning platform as a consultative platform with learners – using blogs, discussion forums and voting mechanisms. Some schools had anonymous suggestion boxes and 'Student Gripes' forums. These uses of the learning platform were often related to the citizenship curriculum with an emphasis on 'developing skills of participation and responsible action'. For some learners, a particular benefit was that the platform provided a safe space in which they could voice their opinions to teachers and school leaders.

Supporting a sense of school community

The effective use of learning platforms offered a flexible space for activities, including extra-curricular activities, and enabled processes that supported the development of the school body as a community. Learning platforms were an especially useful site for hosting the activities of school-wide groups where learners from different year groups were involved. These included school-wide fundraising activities, journalism clubs, sports teams and music groups. Learning platforms were also used as spaces where learners could maintain contact with distanced members of the school community. Some schools were using the learning platform to keep in contact with teachers and learners who had left the school, as well as parents who were on service with the armed forms.

Enhancing engagement with the wider community

Learning platform technologies were being used to support school interaction with a range of outside groups and organisations, and to support school activities with local community groups and organisations. The learning platform provided an accessible space for the activities of various school–community links with organisations such as youth clubs and community projects. Some schools had used the learning platform to develop 'community journalism' activities where learners gathered information about their localities. Some schools allowed community groups to also use the learning platform as part of their 'extended school' activities – such as 'young mums' groups and over-60s computer clubs. Some schools were also using learning platforms as part of their 'global citizenship' activities. Learning platforms were being used to showcase work to the world and interact with the global community.

What did the case study schools say?

[The student council] have got their own area now, so they want to ask for feedback on certain things about the school, whether it be about the school quality of food or the quality of PSHE lessons. At the moment, they're designing the questionnaire that they want to put up on the learning platform so that the students can actually complete that online, either at home or at school, and generate more discussions. It's quite nice when you see the discussion groups and the comments that students put up, and the staff respond. It's quite…a different way of doing it. [Headteacher]

Other teachers in other schools and people like that across the world have tweeted back at them 'Oh, we really like your videos' and things like that so, for my class, it's very much a wider audience thing and publishing their work to lots of different people … The learning platform is sort of taking them out in the world a bit more. That's one of the things that it brings to the school, that sort of global citizenship. [Teacher]

We've got a meeting place so we can speak to other students and we've got a Student Gripes area so any issues you want you can put on there and share with everyone. When they moved the lunchtimes around people didn't like it as much. There was a lot of arguing on Student Gripes about that. People, like Head of School, look through Student Gripes and they've made loads of changes because of it because everybody was arguing. [Year 13 learner]

Conditions for success

The schools that were using their learning platforms to enhance the school community linked their success with a number of specific conditions being in place:

- **Building upon already existing community and civic activities**: school leaders and teachers were keen to stress that the learning platform was fitted into existing school community and citizenship activities. The benefits described here were most apparent where schools had a tradition of learner voice and school community.
- **Using a range of communication technologies**: learner voice and consultation appeared to flourish where schools had set up a range of possible communication options – from blogs and forums, to instant messaging. Allowing learners a range of communication channels appeared to facilitate most success.

Related benefits

Schools that were using their learning platforms to enhance the school community also found benefits in these areas:

- Organisation of information and communication
- Parental involvement and support for learning at home
- Supporting additional educational needs and inclusion

Key case studies

The following case studies illustrate the benefits in this area:

- Secondary school 1
- Secondary school 6
- Primary school 1
- Primary school 4.

6 Emerging conditions for the effective use of learning platforms

The 12 benefits of learning platforms outlined in this report need to be understood within the broader priorities and context of each of the case study schools that participated in the research. How a school uses a learning platform is strongly linked to the wider school priorities which in turn are connected to school characteristics, such as school size, student selection policy, and the demographics of the school community. On this basis, all the case study schools had decided to focus their initial use of the learning platform on achieving some benefits over others, and to develop and broaden this focus over time.

The extent to which the 12 benefits described in this report were realised in each case study school is presented in Table 1 using a 'traffic light' measure. This is constructed as a relative measure of how these benefits were evident across the twelve schools drawing on the case study observations during school visits and the degree to which these benefits were reflected within the interview data sets. The table shows how well each benefit theme is embedded in the relevant school. A 'traffic light' rating scale has been used as follows:

GREEN: The benefit/import of the theme is well embedded and the research team saw significant evidence of this.

AMBER: The benefit/import is recognised by the school and the research team saw some evidence of this although realisation of the benefit is at an early stage.

RED: There is little evidence of the benefit/import of the theme being embedded or recognised and whilst action in this area may have been planned or considered, related activities are not yet fully evidenced.

This measure allows for identification of how these benefits occurred across the sample. However, the table should not be used to make comparisons across the case study schools. In particular, the journey towards embedding the learning platform and the range and variety of school philosophies, strategies and ethos employed in embedding the learning platform are not visible at this surface level.

	Secondary Schools						Primary Schools					
	1	2	3	4	5	6	1	2	3	4	5	6
Organisation of information and communication	Green	Green	Green	Green	Amber	Green	Green	Amber	Green	Green	Green	Green
Parental involvement and learning at home	Amber	Red	Green	Amber	Amber	Amber	Green	Amber	Green	Amber	Amber	Amber
Independent and personalised learning	Green	Green	Green	Amber	Green	Green	Green	Green	Green	Green	Green	Green
Quality and relevance	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green
Monitoring and assessing learning	Amber	Green	Green	Amber	Green	Green	Green	Green	Green	Amber	Green	Amber
Interactive and collaborative learning	Green	Amber	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green
Digital literacies	Green	Amber	Green	Amber	Green	Green	Green	Green	Green	Green	Green	Green
Teachers' time	Amber	Green	Green	Amber	Amber	Green	Green	Green	Green	Amber	Green	Green
Strategic leadership	Green	Amber	Green	Green	Green	Green	Green	Amber	Green	Green	Green	Green
AEN and inclusion	Green	Amber	Red	Amber	Red	Amber	Green	Green	Green	Red	Amber	Red
Behaviour and attendance	Amber	Green	Amber	Green	Green	Green	Amber	Amber	Amber	Amber	Amber	Amber
Civic identity and community	Green	Amber	Green	Green	Amber	Green	Green	Green	Green	Green	Green	Green

Table 1: Case study schools and the 12 identified benefits. RAG colours denote the level of embedding/import in each school.

The project was also able to identify the conditions that underpin the effective use of learning platform technologies in schools. We focus here on the conditions that are pertinent to the implementation and use of learning platforms to realise benefits for teaching, learning and management, rather than those that relate to general ICT issues. These conditions allow for the identification of common barriers and impediments to realising the benefits that learning platforms can support, and the corresponding strategies for overcoming these. The emergent key factors and conditions that facilitate the successful implementation and take-up of learning platforms and associated technologies are discussed in the remainder of this section in relation to the following issues:

- Effective procurement and implementation
- School vision and strategic development
- Approaches to deployment
- Support, training and continuing professional development
- Development of learning platform content
- Stakeholder involvement
- Change management and technical issues.

These factors and conditions are relevant to the realisation of all twelve of the identified benefits in Section 5.

6.1   Effective procurement and implementation

A key condition for effective procurement of learning platforms was that the participating schools had an established tradition of ICT innovation. Through their experiences schools had developed the ability to be critical of the promises around technologies and selective regarding the technology they employ to meet the needs of the school. Furthermore, schools had critically investigated and trialled different learning platforms, with some schools having changed learning platforms a number of times to find the one that best suited their needs. Some schools had developed strong links with neighbouring schools through clusters and LAs to support their procurement process. In addition, several schools had developed links with manufacturers and suppliers to inform their use of the learning platform.

Investment by the school in an infrastructure that supports staff and learners being confident IT users and achieving a suitable level of e-maturity before the introduction of the learning platform underpinned effective implementation. Adaptability and interoperability of the learning platform with other systems were also considerations for procurement and effective use of the learning platform in some schools, such as the ability to import existing materials into the learning platform (from the school website or MIS). Compatibility with existing technical systems was key but also crucial was the compatibility of the learning platform with the schools' pedagogical system and values.

The learning platform implementation approaches that were most successful were those that aligned with the school priorities, the school ethos and philosophy, and where technology was seen as a tool for realising the school strategic intentions and targets (such as supporting raising attainment or parental involvement). That is, the context and rationale for their use was clear and linked to the priorities and needs of the school, and the leading rationale was driven by the demands of teaching, learning and management and not by the technology. This enabled all stakeholders, including senior manager and leaders, teachers, learners, parents and governors to see the purpose of using the learning platform, and its potential benefits for enhancing teaching and learning. In some case study schools successful implementation of the learning platform was also related to integrating the learning platform use in the school development plan where it was seen as core, but was budgeted for, framed and evaluated in conjunction with other school priorities rather than as a stand-alone element. In many schools the impact on and the added value of the learning platform for learning was one of the drivers for its effective use.

6.2 School vision and strategic development of the learning platform

Effective implementation of the learning platform was underpinned by a coordinated, positive and enthusiastic approach by senior managers in the participating schools. More specifically, a clear leadership vision for the learning platform, and ICT more generally across the school, was considered important across many of the schools. This involved, for example, the development of strategic policies and initiatives aimed to improve digital literacy among staff, learners and parents. However, it is important to note that that this vision, while directed by school senior leaders, was not a 'top down' implementation. Rather, it was often characterised as a whole-school challenge. In larger schools a cascading leadership model, where specific expertise was identified, corralled and redistributed at appropriate levels, worked well. Effective implementation was often characterised by the transparent communication of a vision and goals regarding the learning platform, with the senior management team overseeing implementation alongside an understanding of teachers' role and responsibilities.

Making the use of the learning platform a whole-school target (in some schools making it part of performance management) and involving everyone was central to the take-up and effective use of the learning platform. The introduction of the learning platform as one part of the ICT strategy of the school was central to its effective use, and specifically, its implementation across the curriculum – both strategies that worked to embed the learning platform in everyday practices and key elements of school life.

An important aspect of leadership around the learning platform was the role of individuals – champions who are self-motivated, enthusiastic and knowledgeable about ICT – especially in the primary schools; in larger schools the role of subject departments was important in the strategic development of the platform's use.

Throughout the schools the learning platform was used to complement wider strategies and approaches intended to improve educational outcomes such as Every Child Matters and online reporting.

6.3   Approaches to deployment

As already noted, a strategic and inclusive approach to the deployment of the learning platform was key to its effective use. An essential element of this was a positive school culture and environment that supported stakeholders being creative and innovative, with senior leaders within the school praising and rewarding innovation and celebrating success stories. This served to raise expectations for staff and learners by taking initiatives, showcasing the use of the learning platform for other teachers to follow, and by convincing other teachers of the benefits of using the learning platform. In some secondary schools key enthusiasts within departments were involved in initial explorations and experimentation and also acted as feeders for the development team.

On the other hand, issues of staff retention and the loss of ICT champions have generated problems in developing and integrating systems in other schools. In this context, devising a framework for implementation of the learning platform has been important, not only in providing continuity but also measurable milestones along with benchmarks (awards, for example) that act as pivotal points in the building of confidence for staff. Focusing the use of the learning platform across the curriculum, and on targeted areas of priority work such as behaviour and attendance, schools can ensure the take-up and use of the learning platform across the institution. Avoiding duplicating work was an intentional practice to encourage use of the learning platform in many schools: for example, moving from traditional paper-based/folder processes to using online spaces on the learning platform such as an online calendar in place of a physical one.

6.4   Support, training and continuing professional development

The provision of support, training and continuing professional development for teachers, administrative staff and school managers was an essential tool in the effective implementation of the learning platform. A key condition for success was a staff team that included individuals with expertise of both pedagogy and technical knowledge (an ICT coordinator with teaching experience and a technician, for example). This helped to ensure that the learning platform was used in ways that supported pedagogic aims and did not just become a 'bit of kit'. In addition to training on the technical aspects of the use of the learning platform, training needed to focus on the potential pedagogic and managerial purposes of the learning platform. A range of support was needed in addition to training, such as on-the-spot support within the school, and some schools identified experienced supportive staff or appointed individuals with various responsibilities such as data manager, attendance officer, an e-learning manager) to support implementation and use of the learning

platform within the school. Maintaining a helpdesk and technical support team in large schools (especially secondary schools) was useful for providing support and addressing teachers' individual pedagogic/technical needs and continuing professional development.

The successful embedding of these technologies into everyday practice was supported by ongoing and differentiated training that addressed the specific needs of teachers. Training and support were provided in various forms (workshops, staff meetings, open-door sessions, and use of help-sheets with screenshots on the learning platform, for example), refreshers at various occasions, and the use of exemplar materials showing best practice. Workshops focused on specific learning platform activity that was purposeful and relevant to teachers' work such as planning. Time was given to teachers to explore the learning platform and new tools within it. Software that enabled access to ready content or to tools for creating content was provided, lending reason and purpose to teachers' use of the learning platform.

In some schools the involvement of teachers in a 'practitioner-researcher' process utilising the learning platform tools contributed to successful implementation and development of the learning platform in the school. On the whole, the successful use of these technologies to support effective teaching was framed by teachers' commitment, confidence and a willingness to try new things with the learning platform, supported by the school culture and environment. Providing teachers with their own equipment (usually laptops) was a condition for success in some schools. This enabled teachers to experiment with the learning platform tools more easily and as a consequence they were more confident and willingly to use the learning platform in the classroom.

6.5 Development of content for the learning platform

Teachers were central to the development of content for the learning platform. Ensuring that teachers were given the time to experiment and explore the learning platform was key to populating the learning platform with interesting content and to ensure the move beyond the migration of the textbook to a digital form. In addition, purchasing software that allowed access to ready content or to tools for creating content provided reason and purpose to teachers to use the learning platform, because this helped them with their teaching/planning.

Learning platforms with user-friendly systems were seen to facilitate implementation as they supported staff to find solutions for problems. Where the learning platform provided tools such as calendars that were similar to tools that were already familiar to staff and learners, this was an advantage as staff were not required to learn new skills to create content for and use the learning platform tools. Making the learning platform more inviting to learners by using icons and visual cues that they were familiar with worked well to embed the use of the learning platform in the schools

and to enable learners (and parents) to develop content and upload it onto the learning platform.

Ensuring the learning platform was flexible and customisable to match or adapt to the school needs was important to successful implementation. In some schools the e-learning leader/ICT coordinator designed the structure of the learning platform so that all subjects were organised in the same way, and this enabled everyone to be 'on the same page' and helped to develop the content and use of the learning platform across the school.

6.6   The roles of different stakeholders

A number of stakeholders were central to the effective implementation and use of the learning platform within the school, including school senior leaders, teachers, support staff, learners, parents, as well as the local authority, and industry suppliers. Collaboration between these stakeholders across a school via the learning platform serves to transfer practices and specialised knowledge, can give each stakeholder access to a range of perspectives and a bigger – more holistic – picture of learning, teaching and management.

For some schools the organisation of the LA school cluster has been a factor for success, in particular access to support for technical matters, maintenance and training by the county/LA, and centrally procuring services. Clusters also provided the opportunity to share knowledge and ideas within the network, particularly important for teachers of minority subjects, enabling them to link up with colleagues across the LA or nationally. The LA can also offer reassurance to parents and other stakeholders regarding the safety of the learning platform. In addition, the LA vision for the learning platform has been a key driver for the success of some schools. For other schools, having an independent platform was considered an advantage, as they could move on their own pace and terms.

Awards for schools such as the ICT Mark and LGfL awards have also been motivating factors for staff to further develop the learning platform. Longevity of experience in technology innovation also contributed to an understanding of the change management process in relation to the learning platform.

6.7   Change management and learning platforms

Senior managers spoke of the need to understand the implementation of learning platform as any other management of change, and as a continuous process. This could mean, for example, allowing for 'little tipping points' when teachers experiment with new tools the use of which is then spread across the school, then providing enablers such as reducing teachers' workload in administrative tasks.

Creating a delegated and democratic climate rather than an individual 'hero driven' implementation of the learning platform was key to the implementation of the

learning platform and change management, although schools did benefit from the support of enthusiastic individuals such as ICT coordinators and e-learning managers who encouraged, motivated and enabled other staff to use the learning platform. Providing all stakeholders with ideas for using the learning platform, continuously 'drip feeding' information and tips about aspects of the learning platform helped to avoid overload and maintaining momentum. In many cases schools supported change by identifying staff who could act as a 'translator' between different groups (the teachers and the technical team, the school and the provider, the school and the county/LA). A crucial aspect of change management was to ensure that members of the senior management team of a school were knowledgeable about learning platforms and were able to bring up ideas/ask appropriate questions.

Schools that organised and planned for small achievable steps that were integrated in everyday practices and the broader school development of the learning platform were effective in managing the change process around the implementation of the learning platform. These steps needed to be integrated into an overall strategy or vision across the school.

7 How learning platforms are being used to support effective learning, teaching and management

7.1 Supporting effective learning

A key condition for the effective use of these technologies to support and enhance learning was the degree to which schools saw them as an integral part of their everyday practice. These everyday practices related to a coherent whole-school vision around issues like learning between home and school, independent and personalised learning, assessment of and for learning, accommodating a range and variety of learning styles and learning needs, and the notion of developing the 'whole' child.

Criteria for success in these areas involved the generation of opportunities to carry learning into the home and other spaces in local, national and international communities. This was achieved in a variety of ways, such as enhancing learners' digital literacy skills through integrated use of a wide range of inter-related technologies; facilitating peer discussion, reflection and review; promoting critical thinking through problem-based learning and engagement with real-world information systems, as well as promoting and enhancing self-study skills through increased opportunities for independent learning.

Learning platforms were used to support effective learning in a variety of ways, providing a wider range and variety of resources which supported individual learners' learning needs, such as the use of audio clips to support slow readers. In modern foreign languages, many schools saw an increase in the range, variety, quality and

type of resource being used, including use of native radio or television to support language learning. In maths and science video clips were used to support learner memorisation of core knowledge, including songs posted on YouTube to learn Pythagoras' Theorem or in science to learn about the electromagnetic spectrum. Innovative approaches to provision of alternative learning solutions mediated by these technologies were most successful where these were promoted by ICT champions and where allocated time was provided for teachers' continuing professional development.

Establishing learning platforms as a co-owned repository for sharing and managing resources was key to its successful embedding as a support for effective learning. Learners were most positive about the platform's ability to provide an easy-to-access medium for storing, archiving and sharing files between home and school and for sharing access to files between learners and teachers. The adoption and use of e-portfolios was viewed positively by learners and teachers alike and was seen as a successful support for learning insofar as they provided learners with a space to showcase and track their work. Where adopted, the use of e-portfolios gave learners a sense of ownership of their learning and, through learner engagement with this feature, provided a means of extending learning into the home as well as enabling learners to use online resources and tools to identify, share, and keep track of gaps in knowledge and ways in which these gaps have been met, with evidence provided by the learners themselves.

Where learning platforms were successfully integrated into everyday practice, these technologies helped to ensure learning continued, for example, through increased sharing/adapting of learning activities during extreme weather or following special events or visits. Effective learning was also enhanced through increased involvement of external communities, with the learning platform acting as a 'shared gateway' for the sharing of a parental blog on life in the Navy, for example, or local retirees sharing memories of the war through shared narratives. Other examples related to situations where learning was made more relevant through engagement with real-world artefacts and settings that served to promote learner literacies and teamwork, such as online magazines, journals and even TV stations.

7.2   Supporting effective teaching

Teachers across all participating schools reported that the learning platform had helped to make their teaching more effective. A key condition for success was the conceptualisation of the learning platform as a 'one-stop shop'. As with learners, this notion of a co-owned repository enabled teachers to store, archive, manage and share resources more easily. The ease of access afforded by learning platforms to resources and information between home and school, in different locations around the school and between stakeholders also allowed teachers to manage their time more effectively in terms of how, and where, they negotiated planning and administrative matters.

A key area of success in many schools related to communication and information sharing. This was most successful where there was a whole-school vision for transfer of these practices to the learning platform. The most successful starting point for instigating a culture of online communication was the generation of an online staffroom and/or virtual staff notice board. The resultant visibility and transparency of communication and information, particularly around planning, reporting and data management, led to enhanced support for teaching in other areas such as the development of resources as well as the range, variety and quality of materials. The use of the learning platform as a central repository also promoted consistency of practices such as lesson planning and delivery at whole-school level and the sharing of ideas amongst staff and with the wider teaching and learning community via online networks. This in turn promoted increased resource development through the sharing of ideas. The development of individual and shared resources to support teaching served to build teacher confidence and skills and enabled staff to generate a growing repository of materials that could be adapted year on year to suit new groups of learners and, at primary level, facilitated learner transition from one key stage or year group to the next.

7.3   Supporting effective management

Both senior managers and teachers reported that the learning platform was a useful support for effective management. Greater efficiency was achieved through the ability to share planning and through enhanced media for communication. A key criterion in the success of this approach was the transfer of certain practices (daily bulletins, calendars and planning activities, for example) to the learning platform and the integration of information systems with data management systems. For reasons out of the control of most schools (software development progress of platform providers) integration between information and data systems was mainly by a simple link between portals. However, this was viewed as highly effective by many participants insofar as it supported the presentation of the learning platform as a one-stop shop. The integration and embedding of the learning platform across all areas of school practice was seen to provide ease of access to a wide range of data and other information. For example, teachers reported ease of access to learner data relating to behaviour, attendance, grades, progress, attitude and family context and to staff-related data such as mark-books, reports, assessment of/for learning, planning and development of lesson materials. There were also opportunities for tracking individual and departmental CPD needs, which in turn could be linked to the school development plan as a whole. On a whole-school basis, management of communication via virtual staffrooms and notice boards was reported as providing a sense of consistency and timeliness. This contributed to changing practices, as for example, teachers started to log in on a daily basis to check communications and the learning platform became a key source of information.

Transfer of key practices to the learning platform was perceived as increasing viability, transparency, coherency, consistency accountability and responsibility of

stakeholders (senior management, teachers and support staff) whilst at the same time it was perceived as enhancing stakeholders' sense of ownership both in these technologies and in the everyday management practices of the school, at a range of different levels (individual, departmental, whole school).

7.4 How far are these technologies being used to support existing practice or to transform practice?

The learning platforms are being used across participating schools to successfully support or transform existing practice in a variety of ways relating to learning, teaching, communication and data management.

Data management is enhanced through integration or linking of data management systems with information systems through a common portal. Bringing all resources together in one place generates a digital space for management and use of data and resources by different stakeholder groups. These technologies are used by teachers and learners to share and collaborate in the generation of timely data around learning targets and assessment of/for learning. Whole-school communication is being transformed through the use of online messaging systems and virtual staffrooms and notice boards.

These changes in practice are facilitating dialogue between staff, management and learners at whole-school level. For example, discussion boards, surveys and questionnaires are used in many schools to support learner voice, to provide immediate feedback and opportunities for whole-class reviews of learning. The digitisation of data also provides opportunities for statistical review of targeted initiatives such as assessment for learning programmes or 'learning conversations' (learner feedback to staff on teaching) at whole school level. In addition, links between school, home and community are made more visible by providing digital spaces for sharing of experiences, such as e-portfolios as sites of display of work (learning), and the use of blogs as collaborative learning spaces between classes, year groups, local schools and even international communities. In primary schools, particularly, these technologies are being used to engage parents in the everyday narratives of the school as a learning community through the sharing and celebration of learners' achievements, assemblies, fundraising days and so on.

7.5 Which approaches to the use of learning platforms are most effective and what are the factors for successful integration?

The integration of learning platforms is most effective where schools identify and target the particular needs of the learning community and take a stepped approach to implementing initiatives. The needs of stakeholders can differ significantly between primary and secondary settings.

In secondary schools, implementation initiatives tended to focus on management and teacher needs as a starting point. In particular, there was a focus on engaging teachers by providing them with tools that could 'make their lives easier'. Most often, this was achieved through improved support for data management, assessment and reporting, and enhanced communication processes. In some schools, an alternative approach of developing curricular resources and engaging learners was adopted as a starting point. In terms of getting all staff on board, the data management approach, with some form of requirement for participation by all, was generally the more successful approach.

In primary schools, teachers' needs were identified in much the same way as in secondary schools. However, the sharing of planning at whole-school and year group levels was seen as a key benefit and condition for success. Further, the learning platforms in primary schools were used effectively to involve learners in monitoring ongoing targets and assessment in a more holistic way as they operated in a one-teacher, one-class environment that was not constrained by being subject-based. Home–school communication was also easier to facilitate at primary level for the same reason.

Factors for successful integration of the learning platform as a support for effective integration included making sure that staff were on board by introducing initiatives in a shared way, inviting discussion but also enforcing implementation where necessary. Successful integration occurred more often where there was a whole-school vision/approach to embedding initiatives, supported by a virtual staffroom, shared planning stored online and collaborative approaches to teacher (and other) CPD initiatives. A stepped process was perceived to be the key to success in many schools. Staff needed to be sufficiently knowledgeable about the role of the learning platform before it could be used by learners and parents so that they could answer any questions raised. Training and support were essential and this applied to all stakeholders. This level of inclusive support was seen to be a key to involving parents/learners in the assessment process. In some schools one way of meeting this need was the provision of workshops which focused on specific learning platform activity that was purposeful and relevant to teachers' work (such as planning) and to parental engagement.

7.6 Overcoming barriers and issues to effective implementation

Even where the school vision was coherent, consistent and successful, barriers to successful implementation were presented. These related to perceptions of the change management process involved, the need to be flexible and adaptable in approach, awareness that access to, and confidence in the use of, technologies particularly in the home might not be equitable or uniform, and recognition that use of technologies required a robust awareness of legal, moral and ethical issues relating to availability and sharing of private data.

Steps taken to overcome these barriers included stepped implementation (such as small bits of success rather than a one-time master plan, staggered introduction of initiatives, targeting data management, then planning, then teaching and learning) that fits stakeholder needs in a timely fashion, and targeting staff, governors /PTA, learners and parents in that order. In terms of flexibility and adaptability, an approach that viewed the change management process as 'testing the waters and seeing what works' served to frame expectations in a more positive, iterative way, so that unanticipated outcomes did not leave staff with a sense of failure.

Identifying existing levels of skills and access and taking steps to provide training and access where this was lacking was also a key factor in overcoming barriers relating to stakeholder use of and experience with technologies. This was effected through teacher CPD or after-school workshops for learners and parents.

Home access to technologies was becoming more widespread but issues were identified relating to availability of computers and broadband internet access. Some (albeit fewer) homes had no computer access, whilst in others computers were a shared asset so that access time was limited where there were multiple children, with older children being given precedence over younger ones. Ways of addressing this were identified in a range of home–school technology initiatives including the Home Access programme, or lending, leasing or selling equipment, and providing in-school access in after-school hours. Most participating schools had some form of technology initiative (more leasing at secondary level and lending at primary level). Training offered related to all stakeholders – staff, governors/PTA, learners and parents.

Barriers to adoption of technology solutions were prevalent at both secondary and primary level. In the former, issues arose due to the size of the student body and the level of technical support required to maintain large networked systems. At primary level, smaller learner numbers meant a reduced budget for acquiring, sustaining and maintaining equipment, and often there was insufficient funding for a full-time technician. At secondary level, a dedicated team of staff were engaged in many schools. At primary schools, technicians were employed part-time and/or shared between schools in local clusters. In addition, staff training looked to develop a higher level of self-sufficiency amongst staff to support a combination of pedagogic/technological skills.

In terms of e-safety and data management issues, a majority of schools offered guidance and training to all stakeholders around safe and secure use of the learning platform both as a tool for learning and as a tool to support learner progress. As a result, learners reported that they felt safe using the learning platform and that they felt it was a safer environment compared to the other internet tools they use such as MSN or Facebook. Schools also took steps to reassure all stakeholders about the safety of learning platform, in particular, addressing parents' fears about their children using the learning platform. This was done through parents' evenings and

hands-on parental workshops where use of the learning platform was demonstrated and question and answer sessions facilitated.

8 Research approach

The research project took a two-stage approach to addressing its aims and objectives. This section of the report provides further details of the research approach over the seven months of the project.

8.1 Phase One: knowledge mapping activities and identification of case-study schools

Phase One took place throughout September and October 2009. The focus of this phase was on identifying and examining existing data on the range of effective approaches to implementation and use and the benefits/issues of learning platforms technologies in primary, middle and secondary schools. More specifically it also sought to map existing evidence on the benefits that can be realised through the effective implementation and use of learning platforms and associated technologies as part of a wider learning, teaching and management strategy. Findings from this phase also supported the development of the fieldwork research instruments (interview topic guides, observational frameworks, focus group *aides memoires* and so on). This phase of the research activity involved a review of a wide range of literature and online networks alongside in-depth interviews with 15 key informants (see Appendix A).

In terms of selecting the case study schools, the project team compiled an initial list of 230 suitable primary and secondary schools across England. These included schools that were identified as having award-winning ICT provision and/or having been nationally recognised for their ICT use, as well as schools recommended from the key informant interviews and requests to the ICT research and Initial Teacher Training communities (via the Mirandanet, ITTe, and Becta research networks). This long list was reduced to 115 schools once middle schools had been removed and after the remaining schools had been checked against the 'Star Chamber' database for previous involvement in recent Becta research projects.

A short questionnaire was emailed to all 115 schools on this list. Where possible, telephone or email contact was made with LA ICT coordinators with responsibility for learning platforms to gather local information on the listed schools. Where schools had not responded to the email questionnaire, and where information was not available from the LA, the school was telephoned to gather the information. From this information, a sub-sample of 30 schools was selected to fulfil the following selection criteria:

- A learning platform had been implemented in the school for more than one year

- There was clear evidence of identifiable school leadership around learning platform use
- There was a high level of visible online activity on the school learning platform and its technologies
- The school had a clear focus on one or more key areas of teaching, learning, management, administration, and parent/home links.

From these 30 schools, a final sample of twelve schools was selected to offer a range of school types (urban/ rural, large/ small, single sex/ co-educational, different specialisms,) and also to provide a sample of schools that were using a range of different learning platform applications and providers. Six primary and six secondary schools were selected to form the basis of the second phase of the project (see Appendix B for brief descriptions of each school).

8.2   Phase Two: in-depth case studies of 12 schools

Data collection took place in the 12 case study schools between October 2009 and February 2010. The research design for the school studies focused on the use and benefits of learning platforms and associated technologies across a range of school activities and subject areas at Key Stages 1 to 4. The research activities started by focusing on the school senior management teams and ICT co-ordination teams in order to explore the learning platform from an institutional perspective. In order to minimise disruption, research activities then focused on teachers and learners from specific year groups identified by the individual schools. Where appropriate, parents were also included in the research activities.

Within each case study school a range of methods were employed. These were ordered to move from an initial broad 'school level' picture of learning platforms and associated technologies to a more focused perspective at the 'level of the classroom' and then the interactions between school and home. Each case study therefore consisted of:

- **In-depth interviews conducted with school senior management and administration teams (SMTs)** that were involved in the use of the learning platform in each school. These interviews provided a rich picture of the institution and organisational issues underlying the implementation and improvement of the managed learning system. The interviews focused on areas such as: assessment management, monitoring learner progress, reporting, curriculum planning, and communication and collaboration, managing interventions and remote access for learners, teachers, parents, administration, organisation and management, and the transition from primary school to secondary.
- **Focus group interviews of between four to eight teachers** in each school to gain a sense of their use of learning platforms in the course of their practice. These interviews were used to explore issues raised by the

school SMT, as well as identifying issues that teachers experienced in using learning platforms to support and extend their own teaching, specifically in relation to time (planning, administration, creation/sharing of resources), curriculum planning and management, assessment and monitoring and the use of data for tracking learner progress and managing interventions.

- **Focus group interviews with four to six learners from two year groups in each school**. These interviews utilised learner Homework Planners, images of learning platforms, and interaction with the school's learning platform using talk-aloud protocols to capture the learner perspective. The learners in each group reflected the range of ability groups within the year. Topics covered included access to learning materials and support, flexibility and choice, learner autonomy and personalisation, motivation and engagement, communication and collaboration, remote access, as well as the relationships between families, schools and learners.

- **Structured classroom observations** of learners' in-class use of learning platform technologies. The observations used a structured, observational grid to collect data on how the learning platform featured in the school, variation of use across subject areas, the interaction and connections made between home and school in the classroom, the flow of learning materials and support, and issues of flexibility, personalisation, motivation and engagement.

- **In-depth interviews with parents/carers** where the school was using the learning platform to engage with the parent body. The first half of these interviews took the form of a 'talk aloud' observation of the parent's use of the learning platform. Here parents were asked to demonstrate how they use the learning platform on a computer equipped with screen-capture and voice-capture software. The second half of the interviews allowed parents to explore and expand upon wider issues relating to their engagement with the learning platform. This covered a range of issues including relationships between families, schools and learners, learner motivation and engagement, communication and collaboration, transition from primary school to secondary and remote access for learners, teachers and parents.

- Where accessible, **reviews of the school's learning platform content**. This involved the review of a variety of aspects including the type of content available, the design of the learning platform (whether it was outward or inward facing), and navigational routes. Where possible, **online data-collection activities** were undertaken to gain an understanding of how each school's learning platform was being used. Built-in statistics that tracked the basic access data were analysed – thus providing a broad quantitative picture of the amount of use and the mapping traffic flows to

each learning platform (over time, and by user). These reviews are included, where appropriate, in the individual case study reports.

All of these research activities resulted in a total of 277 respondents being interviewed across the 12 case-study schools (see Table 2).

	Primary schools (n=6)	Secondary schools (n=6)	Total
Senior management	24	11	35
ICT coordinators	6	11	17
Teachers	24	30	54
Learners	95	49	144
Parents	14	4	18
Others (governors, library managers, administrators)	6	3	9

Table 2: Number of interviewees across the 12 case study schools

8.3 Analysis of data

While a range of analytical procedures were used to suit the different data sets, all analyses were organised around thematic codes developed by the project team through the preliminary analysis. Thematic analysis enabled the data from the different sets to be combined to produce a coherent case study report on each school. These were reviewed and coded thematically by the project team. From this basis the data was selectively coded in terms of categories identified with the initial code list directly related to the aims of the study. The interview data was thematically analysed via the N*VIVO software package in terms of the research questions presented in section 2 of this report. Although some learners and teachers were keen to reveal their identity, all contributions remain anonymised at the level of the individual.

8.4 Ethical considerations

The project followed the ethical guidelines as set out by the British Educational Research Association, with particular attention paid to assuring learners' and teachers' rights to privacy (i.e. ensuring anonymity during the reporting of the data and confidentiality during the fieldwork with regards to other interviewees, teaching staff and on so). At all points, the project sought to ensure the voluntary informed consent of all interviewees, so that all participants understood how data arising from their involvement would be used and reported. Whilst permission to conduct the research was in the first instance granted *in loco parentis* from the Senior Management Teams of the schools, letters were sent home to all parents offering them the right to refuse permission for their child to participate in the project.

Learners participated in the project activities as volunteers and were informed of their right to withdraw from the research at any point.

Appendix A: Key informants

Key informants interviewed in the mapping phase:

Fiona Aubrey-Smith

Robin Ball

Roger Broadie

Drew Buddie

Miles Berry

Lyndsay Grant

Cathy Lewin

Rose Luckin

Anthony Moore

Tim Neumann

Rachel Pilkington

Vanessa Pittard

John Potter

Peter Twining

Sarah Younie

Appendix B: Summary descriptions of the case study schools

Data collection for the project focused on the use of learning platform technologies in 12 diverse school settings, described briefly below.

Primary schools

Primary School 1 opened in 2000 and has since grown to a large primary school with currently around 400 students (4 to11 years old). It belongs to a cluster of 19 partnership primary schools, and this was one of the driving forces for the adoption and development of the learning platform. A commercially provided learning platform was chosen collectively by all the cluster schools and initially used to enhance communication and collaboration – in particular sharing resources, practices, knowledge and ideas. Subsequently funding was ensured for members of the local learning grid and the school decided to continue using the learning platform. The learning platform is interoperable with the school MIS, which was seen as a great advantage by school staff. The school has the ICT Mark award.

Primary School 2 is a junior school that opened in 1976 and has currently around 350 students (7 to 11 years old) mainly from a white British background. There is a Special Needs unit, and an overall higher percentage of learners with learning difficulties than in most schools. There is also a Language Unit for pupils with speech and language disorders. Learners are grouped into mixed-year departments, spending two years in each department. The school has a focus on independent learning and the commercial learning platform has been used to promote this. The school participated in the learning platform pilot at county level. Before the introduction of the learning platform, learners had already been using the internet and had their own space on the school network to save files. A financial system and MIS have been used by schools in the local authority for many years for tracking data. The school website is a source for information for parents, and the parent email system is the main way of communication between school and home outside the face-to-face meetings including parents' evenings and phone communication. Currently, parents use their children's log-in to access the learning platform. The website is also used for showcasing school work. The school has the ICT Mark and QA Naace award and is an ICT consultant school.

Primary School 3 is a larger than average infant school with 270 on roll, serving a mixed catchment area. Learners (4 to 7 years old) are predominantly white British and very few of them are eligible for free school meals. A 2007 Ofsted report rated the school as outstanding. The school curriculum centres on the development of thinking skills, creativity and learner independence. The school emphasises parental involvement and as a result, the learning platform has been used widely in different ways to support parental engagement. A commercial learning platform was chosen by the school. The school website, which existed prior to the learning platform, is still used extensively by the school and serves as an information point for parents of

current and potential students. Although the learning platform was not meant to replace the website, a lot of information from the website has since been transferred to the learning platform. An MIS package is used for monitoring attendance and assessment data. The school excels in its use of ICT and in 2009 won an award in the Becta ICT Excellence awards. The school has recently received a DCSF International Schools Award.

Primary School 4 is a community school hosting around 450 learners from 3 to 11 years old. There are a large number of EAL learners and more than half of the learners are from minority ethnic groups (mostly with Asian, Pakistani and Indian heritage). The 2008 Ofsted inspection reported that 'learners' achievements are outstanding. Standards are consistently above average in reading, mathematics science, ICT and art. Overall, standards in writing are average but improving.' Primary School 4 is one of the feeder primaries for one of the secondary case study schools in the sample (Secondary School 4). The school does not rely on a specific learning platform provider or product. Instead, the ICT team at the school have developed bespoke use of email, blogging and self-built websites to showcase and share work and activities. The school chose this approach due to its senior management team's understanding of the quick obsolescence and amount of support needed by commercial and Open Source learning platforms.

Primary School 5 is a community primary school with attached nursery with around 600 learners between 3 to 11 years old. The majority of the learner population comes from minority ethnic backgrounds and there are many EAL learners. Historically, the school has faced issues of under-achievement, low attendance and a large proportion of children with learning difficulties. Some children come to the school from refugee and/or deprived families and Ofsted reports identify the need to raise standards in English, mathematics and science. Multiculturalism is promoted in the school, and second languages of learners are celebrated. The school has three outward-facing websites that assist learners both with learning and transitions. The school has been using a commercial learning platform for the last two years.

Primary School 6 is voluntary controlled and located in a deprived area with high unemployment. There are around 400 students (3 -11 years old) with a significant proportion coming from ethnic minority groups and/or having English as additional language. While attainment is judged to be below the levels expected for the student population, overall effectiveness of the school has been described as 'outstanding' by Ofsted (2008). The school has won many awards including the Basic Skills award, Artsmark Gold, the Activemark and Healthy Schools status, Becta ICT Mark and it is a National School of Creativity. ICT has been one of the 5 key issues in the school development plan for 7 years and resource allocation for e-learning was included in the financial planning of the school. The introduction of the learning platform in the school was Local Authority-led. An outward school website is aimed at the broader community.

Secondary schools

Secondary School 1 is a community school for girls aged 11-18 (mostly from white British background) with a mixed sixth form. There are currently some 820 students on roll, of which approximately 90 are in the sixth form. In March 2009, the school moved to a new site. Approximately 13 per cent of the student roll are from ethnic minority backgrounds and the number of students having EAL is higher than average (29 languages have been identified). A 2008 Ofsted describes the school as providing satisfactory education and good care and support for students, with those having AEN or EAL achieving well. Pastoral care is seen as a key strength of the school. The school has a long history of technology innovation and experience. It is an ICT register school for the Specialist Schools and Academies Trust (SSAT) (and won the Futures Vision Award looking at lead schools, and their use of IT in the curriculum). The school is also a member of the TeachNet UK, with many staff members contributing digital curriculum resources for use by other schools. It was awarded the ICT Mark in 2007 and is a Becta Advocate school. The school is using a commercial learning platform. This takes the form of an internal system and an external facing extranet. Both systems are interoperable and are integrated with the school website. The school has been using the extranet to stream curriculum resources for approximately seven years and it is well established as a repository for resources to be accessed between home and school and between school and community. The school uses a management information system, which is intentionally kept separate from the VLE and extranet.

Secondary School 2 is a mixed gender community secondary school in a socially and economically advantaged area with around 1460 students (11 to 18 years old) and a sixth form. Attainment on entry is above national average. The percentage of students entitled to a free school meal is very low and fewer than average students have learning difficulties and/or disabilities. Most of the students are white British and English is a first language of the majority of the student population. The school has been awarded with the Artsmark Gold, the Sportsmark Extension Award, the ICT Quality Mark, the Healthy Schools Gold Award, and the Investors in People award. Recent Ofsted results are 'outstanding' and the report describes students' positive attitudes to school and each other. The school uses an Open Source VLE and a commercial MIS. A current school project aims to tie together the systems available and a web designer is working on designing a common theme across interfaces. The school website is also being revamped for further clarity and user-friendliness.

Secondary School 3 is a community school with around 1270 students and 380 students in sixth form in a wealthy area. The school population is relatively homogeneous with around 10 per cent of students coming from ethnic minorities. Around 90 per cent of students move to the sixth form. The Ofsted 2007 report described the overall effectiveness of the school as 'good' with several 'outstanding' features. The school is currently specialising in business and enterprise and languages. The school has a strong reputation for its use of technology. Staff

members are provided with new laptops every three years and students also get their own laptops/netbooks through a parent-supported laptop scheme which has been running in the school for six years. The school uses a commercial VLE and MIS as a learning gateway after having tried out other products. The school also has an Open Source server and is currently looking at using Open Source applications as a base for management and teaching activities. There is an e-learning support team with five staff members, as well as a group of other individuals who carry out specific responsibilities related to the operation of the learning platform. Students run ICT skills lessons for an 'over-60s' club and for local mothers.

Secondary School 4 is a well-established 11–18 mixed community secondary school with a large ethnic minority intake. The school is a Technology College and currently has approximately 1,500 learners. The school is part of a federation and has a very experienced Head Teacher, management and staff. . The school achieves very well in national tests and was deemed 'outstanding' for almost every area at the last Ofsted inspection (January 2009). In terms of learning platform technology, the school has moved recently from using one commercial product to another. The school's current system has been customised to resemble a social networking site and is now becoming embedded with staff and learners. The school has purchased a number of laptops and operates a carousel system in lessons that means that half a class work on the laptops with an internet or learning platform task while the other half engage in offline activities. Email is heavily used by staff and learners.

Secondary School 5 is an inner-city community comprehensive school for girls aged 11 to 18 years. The school has a student roll of approximately 1230, including 350 in a mixed sixth form. A high proportion of students are eligible for free school meals and more than half are from minority ethnic groups; over 42 languages are spoken amongst the student body. A significant number of students are refugees or asylum seekers and many students are described as vulnerable having additional educational needs. The school was described by Ofsted (2008) as a good school with a positive learning culture that motivates and encourages students to achieve their potential. Standards are above average and achievement levels are generally good. The school is a specialist Technology College with a focus on design technology, maths and science. It is also a Leading Edge School and a Training School and maintains close links with two London universities. ICT has been a particular strength of the school with the school offering a wide range of ICT courses including GCSE, AS, A2, BTEC, CiDA, DiDA and the new ICT Diploma. The learning platform at the school comprises a range of materials: a school website, commercial MIS, a set of shared network areas for staff and students and a commercial VLE. The school website is a key medium for communication between home and school with links for staff, students, governors and parents. The school website, VLE and shared network areas are 'integrated' at a surface level but are not yet fully integrated into one seamless system. The school website is produced in house (with

the help of students) using Open Source software. The school has the Becta ICT Mark.

Secondary School 6 opened in 2007 following the merger of three predecessor schools. It has around 2140 (11–19) students on roll including 350 students in the sixth form. The number of students eligible for free school meals or having English as a second language is well above average, with around 33 per cent of the total intake coming from minority ethnic backgrounds. The number of students with additional educational needs is above average. The school specialises in maths and science and operates a college system based around six colleges: arts, humanities, technology, maths, science and sports. Each college has its own leadership structure. The school was judged to have 'made good progress towards raising standards' (Ofsted, 2009) with achievement in 2008 being broadly above average. The school is considered to be a flagship, particularly with respect to the integration of technology. The integration of new technologies has been a particular strength of the school from its inception. Technology provision is considered to be 'state of the art'. The current configuration of learning platform technologies followed trials of different products. A core focus on assessment for learning has provided a focus for a coherent framework for development of the learning platform. The school has a dedicated team of IT support services of approximately 5 staff and a dedicated VLE Development Manager.