
New South Wales Auditor-General's Report

Performance Audit

ICT in schools for teaching and learning

New South Wales Department of Education



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In accordance with section 38E of the *Public Finance and Audit Act 1983*, I present a report titled **ICT in schools for teaching and learning: New South Wales Department of Education**.

A handwritten signature in dark ink, appearing to read 'Margaret Crawford'.

Margaret Crawford
Auditor-General
6 July 2017

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Executive summary

Information and communication technologies (ICT) are pervasive in modern life. Australian research has identified that the workforce demand for digital literacy and advanced digital skills is growing across most areas of work. There is broad agreement internationally and in Australian school systems that digital literacy is a core skill for the workforce and students will need to be confident with ICT. Education systems around the world are using ICT in classrooms to support learning and employment goals.

The New South Wales Department of Education's (the Department's) overall strategic directions for teaching and learning with ICT are set in the 'Strategic Information Technology Plan 2016–19'. The Department centrally provides a base level of resources to schools for ICT and schools supplement funding from their existing school budget and Parents and Citizens Associations. Each school decides how to allocate these funds to meet local needs. Schools also set expectations for how teachers and students will use technology to help deliver outcomes.

This audit assessed how well New South Wales public schools are using ICT to improve teaching and learning. It focussed on planning and teacher and student use of ICT. We examined whether:

- the Department identifies key strategic opportunities to enhance the use of ICT platforms and technologies in schools
- teachers are integrating ICT into classroom practice
- the Department monitors the impact of ICT on student learning.

Conclusion

Several factors are reducing the effective use of ICT in the classroom. These are primarily:

- ageing ICT equipment and inadequate wireless networks
- variable student access to devices at school
- variable teacher access to centrally provided devices to use outside of the classroom.

Many schools are struggling to keep up with growing ICT needs within available funding. The Department needs to review whether its current technology programs provide schools with sufficient resources and support to meet the Department's strategic goals for 21st Century classrooms. The Department should also target additional support to schools to improve planning for ICT resources.

Most teachers are using ICT in the classroom, however, teacher access to devices outside the classroom varies between schools. In practice, teacher working days extend outside classroom hours. Teachers need access to devices for activities such as lesson preparation and student assessment. With limited access to devices outside of the classroom, teachers may not be able to effectively integrate ICT into lessons. Teachers also require further professional learning to support them to develop their skills in using ICT.

The Department is not sufficiently monitoring the digital literacy of New South Wales students, which has declined in national tests. Teachers could benefit from support to assess these skills at a school level. The Department also needs to investigate links between student use of ICT and learning outcomes, so they can better support teachers with evidence-based approaches to enhancing learning through ICT.

Old equipment and wireless networks are not keeping pace with modern demands

The Department's vision for ICT is to enable 'any learning opportunity, anywhere, anytime'. This vision is at risk due to an ageing stock of devices and wireless networks. The average age of devices in New South Wales schools is over four years. Older devices are less reliable, require greater maintenance and support, and cannot run demanding applications. Further, many school wireless networks are beyond the end of their useful life. This limits the number of teachers and students who can access online content on wireless networks at the same time.

The central funding model for ICT in schools is not meeting current needs

Funding for the Technology for Learning program to deliver ICT in schools has not increased since 2004, despite an increase in the number of students and emphasis placed on ICT in teaching and learning during this time. Schools supplement funding for ICT from their existing school budget and Parents and Citizens Associations.

The Department's current funding model for ICT is not adequately addressing a growing gap in the provision of contemporary ICT in classrooms between schools able to access funding from other sources and those which cannot. The Department needs to review whether the Technology for Learning program is equitable in equipping all schools with the modern technology needed to achieve its vision.

Many teachers are not provided with devices for use outside of the classroom

School Principals we interviewed reported that technology is an essential part of a modern classroom and teacher access to devices outside of the classroom can impact how they use ICT. This is because, in practice, teacher working days extend outside classroom hours and teachers need access to devices for activities such as lesson preparation and student assessment. The Department provides teachers with access to a suite of software tools for these tasks.

The Commonwealth Government's Digital Education Revolution program provided teachers of secondary school students with laptops from 2009 to 2013. The Department's evaluation of the Digital Education Revolution program found that teachers reported greater confidence with, and use of, ICT throughout the program.

Providing desktop computers, laptops or tablets for teachers is now a school level decision and arrangements vary across schools. Each school must trade-off between allocating devices for students and teachers. Most other States and Territories provide all teachers with a laptop for use in and outside of the classroom or offer subsidised access to one.

There is limited teacher professional learning in the use of ICT

The Department's research has identified that professional learning is an important factor in how effectively teachers use ICT to enhance teaching and learning. Despite this, the Department provides few courses on using ICT in the classroom directly, and most of these are offered in Sydney. This limits accessibility for teachers outside of the metropolitan area. Schools we visited reported that the costs of courses and providing relief teachers limits the number of external courses or events that teachers attend, especially for rural and regional schools. Increasing the use of online learning would improve access for teachers in these areas.

The Department is not adequately monitoring trends in professional learning in ICT or evaluating the overall effectiveness of courses. A recent upgrade to the professional learning system may provide the Department with better quality data to do this.

Greater monitoring and reporting on technology use in schools is required

The Local Schools, Local Decisions policy gives schools greater authority to make strategic decisions on the use of ICT appropriate to their local contexts. To support this, the Department needs to better monitor current trends, and identify emerging needs to determine future direction and how best to support schools.

For example, the Department does not currently know how many devices are allocated to teachers or how many schools have implemented a student Bring Your Own Device scheme. This affects how schools are using ICT, and places demand on the network and the type of support the Department must provide. An assessment of the ICT maturity of schools would help the Department target its resources to schools requiring greater assistance with planning.

The Department does not regularly monitor or report on student capabilities with ICT. A national assessment found that the ICT literacy of a sample of Year 6 and Year 10 New South Wales students fell between 2011 and 2014. The fall was greater in New South Wales than in other States and Territories. Without more regular assessment or reporting, the reasons behind this fall and the distribution of student capabilities between schools will remain unknown.

Recommendations

By July 2018, the Department of Education should:

1. Review the Technology for Learning program and school ICT support resourcing to determine whether resourcing is adequate for modern school requirements.
2. Develop a program to improve wireless networks in all NSW schools, for instance by expanding the Connecting Country Schools Program to all NSW schools.
3. Implement an assessment of school 'ICT maturity' and use this to target assistance to those schools requiring support with forward planning for ICT.
4. Improve the use of evidence to inform plans and strategies, including:
 - more detailed monitoring of teacher and student access to and use of ICT
 - evaluating the impact of teacher professional learning on student outcomes
 - further examining the links between ICT and student outcomes.
5. Improve teacher access to devices for use outside of the classroom to improve how effectively they integrate ICT into teaching and learning.
6. Improve teacher professional learning by providing more:
 - online learning opportunities for teachers in regional and remote areas
 - courses focused on pedagogy to make best use of ICT.
7. Identify the ICT skills students need, and provide teaching resources to develop these skills and monitor their achievement.

Introduction

Background

ICT is increasingly being used to develop, process and share information in a range of learning, work and social settings. Education systems are responding to these changes by integrating technology-enabled learning into school curricula. It is important for the New South Wales Department of Education and schools to plan for student and teacher access to ICT and develop teacher capacity to use these resources to effectively support teaching and learning.

The Department is responsible for over 770,000 students in 2,200 public schools, including in unique settings such as rural and remote areas where satellite provision is needed. The Department is placing increasing importance on how teachers and students are using ICT to enhance student learning. This has occurred at a time when a significant policy shift has delivered greater authority and responsibility to individual schools.

Schools are making more decisions at a local level

The Local Schools, Local Decisions framework was introduced in 2012 to give New South Wales public schools more authority to make local decisions about how best to meet the needs of their students. The Department has streamlined central policies and simplified school planning and reporting requirements. Individual schools now have greater authority for making decisions on technology in their school and how it is used to support teaching and learning.

The Resource Allocation Model was also introduced in 2012 to give schools greater flexibility to make decisions on how they allocate funding. When fully implemented, schools will manage more than 70 per cent of the state public education budget, up from around 10 per cent in 2013. The Resource Allocation Model recognises the different needs of each school, so that students and schools with greater needs get more resources.

The Department has a strategic plan for information technology

In 2016, the Department released the 'Strategic Information Technology Plan 2016–2019'. The Plan's vision 'is to enable any learning opportunity, for any learner, anytime, anywhere'. Key actions to reach this vision include:

- extending support levels via self service capabilities
- providing devices equitably across schools
- supporting equitable broadband access
- enabling local schools to make informed decisions on learning systems
- collaborating with industry to nurture innovation in technology for teaching and learning
- delivering consistent and reliable information to support decision-making
- developing models of teaching and learning spaces that enable future-focused learning.

Schools are using technology to engage students in their learning

Around the world and across Australia, schools are using ICT to facilitate new approaches to teaching and learning to improve student engagement and develop 21st Century skills. These skills include:

- creativity – generating new or innovative ideas
- communication – clearly articulating thoughts and ideas
- collaboration – working effectively with others to achieve a common goal
- critical thinking – analysing and evaluating information to make judgments.

Ensuring quality teaching and learning approaches in a changing environment is challenging. The Department has recognised the importance of upskilling teachers to meet these needs.

The NSW Education Standards Authority explains that the use of ICT in learning fosters motivation and provides opportunities for better and broader engagement of students. To enable this, teachers not only need to be digitally literate themselves, but must also be able to help students create digital solutions. According to the Authority, requiring students to create digital products aligns ICT with contemporary practices of project-based learning, the integration of knowledge and the increased engagement of students to create deep understanding.

Digital literacy is growing in importance for students' future careers

The Commonwealth Government has defined digital literacy as knowing how to use a range of technologies to find information, solve problems or complete tasks. Digital literacy is also about knowing how to act safely and respectfully online.

Recently, the Foundation for Young Australians has used 'big data' to analyse the skill patterns in the current and future labour market. It identified seven job clusters by grouping the skills that employers are currently requesting. It found some job clusters have stronger prospects and greater long-term security than others.

'The technologists' cluster comprises jobs that require skilled understanding and manipulation of digital technology (for example, programmers and software engineers). This cluster experienced the highest jobs growth from 2010–2015. It is one of three clusters likely to grow into the future as it is more resilient to automation.

The demand for digital literacy skills is growing across different job clusters. For example, the proportion of early career jobs requesting digital literacy skills increased by 212 per cent from 2012–2015. This was the highest growth rate of any skills area. Over 90 per cent of jobs over the next five years are expected to involve digital literacy, and over 50 per cent are expected to require advanced digital skills.

Learning areas incorporate ICT capabilities and digital technologies

The Australian Curriculum Assessment and Reporting Authority is responsible for developing the national curriculum, administering national assessments and reporting on schooling in Australia. The Australian Curriculum identifies ICT as one of seven 'general' capabilities. Students are expected to develop general capabilities in each learning area.

To support teachers to integrate the ICT capability into learning areas, the NSW Education Standards Authority provides:

- high-level advice on how the ICT capability fits across each syllabus area
- an online syllabus tool to identify references to the ICT capability in each stage.

The NSW Education Standards Authority also develops and sets syllabuses based on the Australian Curriculum. ICT is embedded across all NSW syllabuses as a cross-curriculum priority. The Authority is currently incorporating 'design and technologies' and 'digital technologies' Australian Curriculum content into the New South Wales Technology Mandatory Years 7–8 and Science and Technology Years K–6 syllabuses.

Key findings

1. Planning for ICT

The Department's vision to enable 'any learning opportunity, anywhere, anytime' is at risk of not being fully achieved due to accelerating demands placed on ageing devices and school wireless networks.

The Department provides options for schools to make decisions about the use of ICT that are appropriate to their local contexts, within a state-wide framework. Schools are using this opportunity to increase the use of ICT in contemporary approaches to teaching and learning. However, many schools trade-off between providing ICT for teachers and students, and keeping infrastructure up to date. Further, accelerating use of online content is placing demands on ageing school wireless networks. Greater oversight of these issues, targeted support, and evaluation of approaches would support better planning for ICT.

Recommendations

By July 2018, the Department of Education should:

1. Review the Technology for Learning program and school ICT support resourcing to determine whether resourcing is adequate for modern school requirements.
2. Develop a program to improve wireless networks in all NSW schools, for instance by expanding the Connecting Country Schools Program to all NSW schools.
3. Implement an assessment of school 'ICT maturity', and use this to target assistance to those schools requiring support with forward planning for ICT.
4. Improve the use of evidence to inform plans and strategies, including:
 - more detailed monitoring of teacher and student access to and use of ICT
 - evaluating the impact of teacher professional learning on student outcomes
 - further examining the links between ICT and student outcomes.

1.1 Department planning for ICT is not keeping up with modern needs

Annual program to provide ICT for schools has not increased since 2004

The Technology for Learning program has delivered computers, devices, servers and other infrastructure since 2004. Funding is based on a ratio of one device per eight students on a four-year cycle. In 2016, the program provided schools with an average of \$23 per student for ICT. Schools choose how to allocate this funding for desktops, monitors, notebooks, tablets and wireless access points, for both teachers and students.

Annual funding of \$35.3 million has not increased since 2004, despite a 3.6 per cent increase in the student population in this time, and an overall greater emphasis on using ICT in the classroom in policy and practice.

The Department needs to review whether the Technology for Learning program is sufficiently addressing the demands of a modern classroom, particularly in the context of greater emphasis on ICT since the program was established in 2004. The review needs to consider whether the program enables schools to meet the vision of the Department's Strategic IT Plan 2016–19 'to enable any learning opportunity, for any learner, anytime, anywhere'.

New South Wales schools have an ageing fleet of ICT devices

The Technology for Learning program provides funding for ICT on a four-year cycle. Many schools keep devices beyond this cycle, however they are generally less reliable and require greater support. Around half of all devices in New South Wales public schools are five years or older. Around one in eight devices are from the last year of the Commonwealth's Digital Education Revolution program, which provided laptops for Year 9 students from 2009–2013.

In 2016, there were 5.4 students per device less than four years old. However, the number of devices accessible to students is less as this figure includes devices for teachers. The Department was unable to provide information on the split of devices between students and teachers.

School wireless networks are inadequate to cope with future demands in many schools

Many school wireless networks do not have the capacity to deal with current and future needs. Wireless networks are necessary to allow students to effectively use portable devices. Increasing use of technology by teachers and students through Bring Your Own Device schemes and cloud software is placing greater demands on legacy networks.

The Commonwealth Digital Education Revolution program installed wireless networks in secondary schools from 2009 to 2013. This equipment is now considered beyond end-of-life, though most secondary schools are still using it. This is because schools are unable to extend coverage without fully replacing the system. Schools we visited reported they were unable to fund a complete replacement within existing resources.

The Department is funding upgrades of wireless networks and some internet connections in regional and rural schools over the next four years. In announcing the program, the then Minister for Education noted that 'students and teachers need fast access to online resources anywhere in their schools'. There is no plan for upgrades to wireless networks in metropolitan schools that are experiencing similar issues or funding constraints.

The Department is monitoring and managing increasing internet usage

The Department manages internet access for schools. It monitors network capacity at a school and state-wide level. Monitoring of network capacity in schools has improved through the Enhanced Technology for Learning program. This program provides a Standard Operating Environment, enables remote management and support, and allows easier software rollout. The Department has also upgraded school local area networks that did not meet standards.

Greater use of technology and online learning has increased demands on the network. While the Department has responded by increasing overall capacity and introducing measures to manage demand, it also needs to plan to address growing demand for bandwidth as wireless networks are upgraded, Bring Your Own Device schemes expand, and more students and teachers work in the cloud.

New library system introduced to support student information literacy

The Department introduced a new school library system in 2015–16 to replace the 25-year-old OASIS system (see Exhibit 1). The Department has received positive feedback on the training and implementation process, and capabilities of the new system. The project to roll out the library system was completed under budget. The Department could apply positive learnings from this rollout to future technology programs.

Exhibit 1: Implementation of new Oliver library system

Teacher librarians, in collaboration with teachers, play an important role in schools to help students develop information literacy. They build on students' prior experiences to equip them with higher level skills required for adult life, including skills to understand and use information effectively.

The Oliver system uses contemporary technology, presents a familiar web interface, can search across other repositories, and integrates ebooks and other digital resources. It also allows students and teachers to access the system from other areas of the school and at home.

The system was introduced in a staged process. Three groups of schools were initially migrated, with remaining schools migrated on a regional basis at approximately 40 per week.

Teacher librarians were supported through an online course and training session. Each Principal Network also nominated two 'lighthouse' schools to support other local schools and foster communities of learning and sharing.

Source: New South Wales Department of Education.

1.2 Varying approaches in school level planning for ICT

Schools need flexible and tailored advice on how to plan effectively

While the Local Schools, Local Decisions policy intends that schools will make strategic decisions about the use of ICT themselves, we found that there is variation in planning maturity at the school level. Some schools have comprehensive plans that align with the Department's broader goals while others give ICT-enhanced learning a lower priority.

The Department told us that schools can seek planning advice from Departmental ICT support officers. However, each officer supports around 15 schools with a range of issues, including maintaining equipment. This limits the amount of time they can spend providing more strategic analysis or advice to schools. Implementing an assessment of school 'ICT maturity' could help the Department provide targeted advice to those schools requiring greater support.

School planning framework supports focus on identified priorities

The School Excellence Framework supports school planning. It describes 14 key elements of high quality practice across learning, teaching and leading domains. There are two specific references to ICT:

- Curriculum and learning – Curriculum delivery integrates technology, library and information services
- School resources – Physical learning spaces are used flexibly, and technology is accessible to staff and students.

Schools identify three priorities in the school plan and report on progress against these in the school annual report. Several schools we visited reported that the planning and reporting framework helps to focus attention on ICT if it is identified as one of the three priorities.

Each year, schools use the School Excellence Framework to self-assess areas of strength and areas for improvement. Every five years, each school has their self-assessment validated by an external panel. Information from external validations could be used to identify good practice and to target Department resources to schools requiring assistance.

Schools rely on additional funding to provide ICT resources for students and teachers

The Technology for Learning program provides only part of overall school spending on ICT. Schools supplement funding for ICT through Parents and Citizens Association fundraising or from general school budgets. Schools use supplementary funding for student and teacher devices, data projectors, interactive whiteboards, and technical support.

The Department provided each school with an interactive whiteboard and video conferencing facility through the Connected Classroom program from 2007 to 2011. Schools have since purchased additional interactive whiteboards or data projectors. Schools reported to us issues with reliability and image quality in older devices, but few had forward plans to replace them.

The Department does not separately fund teacher devices. New South Wales and South Australia are the only two Australian jurisdictions that do not either centrally fund devices for teachers or offer a subsidised lease arrangement (see Exhibit 2).

Exhibit 2: Arrangements to provide devices for teachers across States and Territories

Centrally provided	Optional subsidised lease	School-based decision
Victoria	Western Australia	New South Wales
Queensland		South Australia
Tasmania		
ACT		
Northern Territory		

Note: Western Australian scheme is voluntary for teachers.

Source: Audit Office research.

Schools we visited considered teacher access to ICT as essential, both in and outside the classroom. Teacher working days extend outside classroom hours and teachers need technology for activities such as lesson preparation, communication, professional development and student assessment. This is growing in importance as the general ICT capability and Digital Technologies Curriculum are incorporated into New South Wales syllabuses and supporting teacher administrative systems are digitised.

Schools could benefit from more central advice on implementing student Bring Your Own Device programs

Schools can implement a student Bring Your Own Device policy if they choose. Each school develops its own locally appropriate guidelines and procedures. The Department's guidelines provide basic requirements and advice for schools. Important requirements are that schools should provide information to key stakeholders and identify strategies to accommodate students without a device. Schools are advised to 'ensure adequate wifi network capacity is in place', without guidance on how to assess adequacy.

Half of the schools we visited had implemented a Bring Your Own Device policy. Schools had consulted their teacher and parent communities, delivered teacher professional learning, upgraded wireless networks, arranged loan devices, and set expectations for students and parents.

A growing number of schools have now gone through the process of implementing Bring Your Own Device schemes. The Department could better support schools that are starting this process with 'how to' guides building on the experiences of schools that have successfully done this.

1.3 Evidence supports the use of ICT to improve teaching and learning

Evidence finds use of ICT can have a positive impact for moderate cost

In 2017, the Department published a summary of evidence on different educational strategies and their impact on students' learning. 'Digital technologies' was found to have a moderate impact for moderate cost. Evidence suggests that technology should be used as a tool to support high quality teaching, rather than an end in itself.

A 2015 Centre for Education Statistics and Evaluation report examined practices in schools that had shown high growth in student outcomes over time. It found that teachers in secondary schools with high growth were more likely to be using ICT in their classes.

Evaluation and literature review supported Bring Your Own Device policy development

The Department evaluated the impact of the Commonwealth Digital Education Revolution program in New South Wales from 2010 to 2013. Teachers and students reported increased engagement and confidence using ICT, which was one of the main aims of the program. At the end of this program, many schools looked to implement student Bring Your Own Device schemes.

The Department conducted a literature review of Bring Your Own Device schemes in 2013 to inform development of Policy and Guidelines. The review found schools implementing Bring Your Own Device schemes should plan for upgrades to the network and wireless access points to cope with the influx of devices. The Department has increased bandwidth to cope with more traffic, and has implemented a range of measures to assist schools to better manage bandwidth during school hours. Responsibility to augment local wireless access networks was left to schools.

Evidence suggests more attention should be placed on teacher professional learning

Several Department research reports have found that planning for professional learning focussed on pedagogy (instructional methods) is essential to make the best use of ICT in the classroom. The Department provides limited direct professional learning on this topic for teachers, but has recently introduced a partner relationship with technology vendors to deliver learning (see section 2.1).

An international assessment of ICT literacy of Year 8 students in 2013 also identified the importance of teachers to building ICT literacy. Australian ICT coordinators reported a lack of teacher ICT skills, a lack of effective professional learning and a lack of incentives for teachers to incorporate ICT in their teaching as the biggest problems they faced.

Teachers reported the barriers were to do with time to prepare lessons incorporating ICT and training on how to do this. The international report suggested that system and school level planning should focus on increasing teacher expertise in ICT use, and that schools should endeavour to implement supportive collaborative environments.

Few references to research in official plans and strategies

The Department's two major strategies for ICT are the Strategic IT Plan 2016–19 and the Futures Learning Strategy. The Strategic IT Plan does not make any specific references to the research conducted to support its approaches.

The Futures Learning Strategy uses external reports on the skills needed in the future workforce to support its approaches. It also cites evidence that a large proportion of students are disengaged in their learning, and that engagement has a large impact on outcomes. Using ICT in student-focused learning approaches is one approach to improve student engagement.

2. Using ICT to support teaching

Most teachers are using ICT to support teaching and learning. Teacher access to ICT outside the classroom affects how effectively they integrate ICT into lessons. The Department could improve monitoring of professional learning and provide more online options for teachers in rural and remote areas.

Most teachers report that they are using ICT in lessons, however, the Department does not know how well this is being done. The Department has limited oversight of the type and quality of teacher professional learning, which is recognised as key to improving student outcomes. Teachers are given access to learning tools and support to learn basic functions, however access to department provided technology outside of the classroom varies between schools. Schools reported challenges with developing teachers to use ICT for student-centred approaches to learning. The Department could improve guidance and professional learning in this area.

Recommendations

By July 2018, the Department of Education should:

5. Improve teacher access to devices for use outside of the classroom to improve how effectively they integrate ICT into teaching and learning.
6. Improve teacher professional learning by providing more:
 - online learning opportunities for teachers in regional and remote areas
 - courses focussed on pedagogy to make best use of ICT.

2.1 Teachers would benefit from further developing digital literacy

Most professional learning is done within the school

The Department's professional learning policy recognises that professional learning is a major contributing factor for improving learning outcomes of students. Responsibility is shared between the individual, school and State Office. Schools are allocated funds for professional learning through the Resource Allocation Model for locally identified needs.

Evidence from our visits to schools indicates that most professional learning for ICT happens within the school. There were several common models for doing this, including:

- staff development days at the beginning or end of term
- regular staff meetings
- team-teaching and observation of colleagues.

Time and cost is a barrier to external teacher professional learning

The cost of courses and of providing relief teachers limits the amount of external professional learning teachers engage in. Costs are greater for rural and regional schools as most courses or events are held in metropolitan areas. Greater online professional learning would reduce some costs and improve opportunities for teachers in rural and regional areas.

In 2016, the Department partnered with technology providers to deliver face-to-face training workshops on collaborative learning for around 1,000 teachers. Feedback was positive, particularly from teachers in rural and regional areas who have limited opportunities to access face-to-face professional learning. These workshops are being continued in 2017 and the Department is also investigating opportunities for professional learning with other providers. The Department needs to monitor the content of these courses to ensure teachers are receiving quality training.

Limited professional learning on ICT is offered by the Department

The Department has a limited offering of professional learning focussed on ICT. At April 2017, 34 courses were identified as addressing the professional standard on integrating ICT into

teaching and learning. Teachers could only count eight of these courses as 'registered' professional learning.

The Department's Futures Learning Unit provides most of the 'registered' teacher professional learning in innovative learning and teaching practice. The Unit offered ten courses for Terms 1 and 2 at its facility in Eveleigh in 2017. Courses covered areas including coding, robotics and creative video production. Only two of the ten courses were available through video-conferencing and this was limited to 20 participants per course. This may limit accessibility for teachers outside of the Sydney metropolitan area.

Professional standards provide framework to support teachers in using ICT

The Australian Professional Standards for Teachers provide a framework for teacher professional practice. Three standards reference the use of ICT:

- use effective teaching strategies to integrate ICT into learning and teaching programs to make selected content relevant and meaningful
- select and/or create and use a range of resources, including ICT, to engage students in their learning
- incorporate strategies to promote the safe, responsible and ethical use of ICT in learning and teaching.

Teachers must demonstrate proficiency against the standards to be accredited. Most schools we visited did not think the requirement for teacher accreditation would focus attention for professional learning in the use of ICT as the standards in this area are broad.

The Department's Performance and Development Framework uses the professional standards to guide teachers' development and performance. Teachers set goals in Performance and Development Plans, which align with the school plan and Department's strategic directions. Teachers in schools that identify ICT as a priority in their school plan are more likely to include professional learning in their individual Performance and Development Plans.

Limited monitoring of trends in teacher professional learning or needs

The Department's professional learning policy requires State Office and schools to evaluate the impact of professional learning. This is done to identify trends and needs, and to inform and improve future professional learning. We did not see evidence of the Department actively monitoring professional learning relating to ICT, apart from the professional learning it directly provides.

The Department's database for courses identified as addressing the ICT standards included courses which were not relevant. For example, asthma training and school sports coaching were identified as addressing the ICT standards. This suggests the Department should be cautious in using the database for monitoring trends in teachers developing their skills in ICT. The Department updated the professional learning system at the end of 2016, and this may improve the quality of information and ability to better identify trends and needs.

2.2 Teachers increasing use of ICT to support teaching

Teacher access to technology affects how well they use it

From 2009 to 2013, teachers of secondary school students were provided with laptops through the Commonwealth Digital Education Revolution program. An external evaluation of the New South Wales implementation of the program found that teachers reported increases in:

- the frequency of laptop use when teaching
- the frequency of performing different ICT-related tasks
- their confidence in using laptops for teaching.

The Department did not provide teachers with replacement devices following the closure of the program. Schools were given authority for making decisions on teacher access to devices in the context of other funding priorities, including devices for students.

We observed varying models of providing teacher access to technology:

- desktops in staff common rooms and classrooms
- every teacher provided with a laptop for use in and outside of school
- a Bring Your Own Device model for teachers with school loan devices available for those without a personal laptop.

School Principals reported to us that technology is no longer a 'novelty' and is an essential part of a modern classroom, as it is in most contemporary workplaces. They argued that each teacher should have access to a device. If teachers do not have access to devices (both at school and outside of classroom hours), they are less likely to effectively integrate ICT into their classes. This was described to us as 'the missing piece of the puzzle'.

Most teachers are using some ICT in their classes

In a 2016 survey, around 80 per cent of teachers reported that they provide opportunities for students to use technology in their classes. Secondary teachers were more likely to report use of technology than primary teachers. This survey does not provide any information on how frequently teachers provide opportunities for students to use technology.

A lower proportion of teachers reported using technology to give feedback to students (64 per cent for secondary teachers and 51 per cent of primary teachers). Feedback, whether provided through technology or otherwise, can have a high impact on student learning. There may be opportunities for further support or guidance to teachers on how they can use ICT to give more timely or enhanced feedback to students, for example using video-annotated feedback or using screencasting.

Increasing take-up of standard online learning tools

Teachers can access standard learning tools (Office 365, G Suite) on Department and personal devices. Teachers can download and install Office 365 applications on personal devices to enable a better transition in and outside of the school environment. The Department provides support pages and external links to help teachers get started with the features of the software. This provides teachers with greater access and flexibility and encourages use of these tools.

There is increasing use of learning tools by teachers and students. In February 2017, there were over 60,000 teachers and students using Office 365 and around 100,000 teachers and students using G Suite. Teachers reported to us that these learning tools help them collaborate and share resources. Teachers also use these tools to communicate with and provide resources to students. For example, students can access lesson slides at home to review or catch up on lessons.

The Department could do more to investigate where and how learning tools are being used to identify and share good practice examples or target assistance to areas of skills gaps.

Access provided to range of resources to support learning

The Department's 'learning tools selector' links tools to modern teaching and learning practices. The selector gives direct links to the tools as well as resources for further advice and support. Over 4,700 users have visited the site since its launch in late 2016 to May 2017, with around 90 per cent of users from the Sydney region. This suggests good initial use in metropolitan areas, but opportunities for further promotion in regional areas.

Teachers can access free and licenced software through the school software catalogue. The catalogue shows what's popular, what's recommended, teacher ratings and feedback. This helps teachers discover and access software and simplifies the installation process. Some software in the catalogue cannot be deployed to teachers' personal devices; this limits after-hours access to resources for teachers who are not provided with a school device.

Teachers can also access online resources through the 'Scootle' digital resource discovery tool. Teachers can filter resources aligned to New South Wales syllabuses. In 2016, teachers viewed over 76,000 interactive resources, suggesting the tool is well utilised. While the tool allows for feedback, New South Wales teachers did not evaluate any resources in 2016 and made few comments.

2.3 Sharing knowledge and experiences can help improve approaches

Area based networks to share good practice are moving online

The Department no longer co-ordinates support for curriculum-based school networks. Several schools we interviewed reported these had previously helped to share practical examples of good practice. Schools are now organised into 'principal networks'. These do not provide the same opportunities for teachers to gain face to face exposure to best practice approaches across New South Wales school communities.

Online tools provide new opportunities for teachers to share resources and good practice. The Department encourages teachers to join 'Yammer' groups for topics they are interested in. It provides teachers with an opportunity to access knowledge across the State. At December 2016, there were 28 Yammer groups for ICT-supported learning, including the 'iPad', 'ICT in the classroom' and 'project based learning' groups.

The Department encourages schools to publicly share their experiences with ICT

The Department supports schools to publish case studies to promote good practice of ICT-supported and future-focussed learning. Schools produce short films that are promoted through newsletters and made publicly available. As at April 2017, the 38 published films had been viewed 225 times on average. This suggests opportunities for further promotion.

In 2015 and 2016, the Department invited rural and remote schools to participate in a case study to document and share their experiences in online collaboration. Three case studies were published and promoted through newsletters. This initiative aimed to document good practices and allow other schools to learn lessons or find inspiration to do similar work.

A new mentoring network may have limited impact due to inadequate relief time

The Department has established a network of 'online collaboration mentors'. These are teachers with expertise in online collaboration technologies. The Department supports the mentors with training, advice and workshops. The mentors provide advice, support teachers with innovative teaching methods, build networks and deliver workshops. Mentors perform their duties in addition to their existing workloads.

While it is too early to assess the effectiveness of this program, lack of relief time may limit how much guidance the network of 18 mentors can provide to teachers seeking advice.

Online series of resources guide teachers on collaborative learning with ICT

The Department provides resources to guide teachers on using ICT for collaborative learning. The 'Collaboratus' resources aim to engage students with topic content through real-world tasks. For teachers, the series models how collaborative and online learning tools can be used with modern pedagogy. Resources are developed by a team of teachers, curriculum or pedagogy experts and learning designers within the Department.

Four resources have been published so far:

- Waking up in Japan – Stage 4–6 Japanese
- Truth be told – Stage 5 English
- The Chinese question – Stage 5 History
- Through the gate – Stage 2 English and Creative Arts (visual arts).

Continued development of resources could provide guidance to teachers in other subject areas on collaborative learning opportunities. A writers' guide is also available for interested teachers to construct their own collaborative learning resource.

3. Student learning with ICT

The Department is not adequately monitoring the ICT literacy of students or providing enough support and advice to teachers on how to develop and assess these skills. The Department could do more to examine evidence on how teacher and student access to, and use of, ICT affects student learning.

Students are increasingly using ICT across a range of subject areas to support their learning. The most recent assessment of ICT literacy showed a decline for NSW students between 2011 and 2014. While schools are provided with a base level of funds for technology, total resources vary across schools and this can affect student learning with ICT. The Department needs to monitor the 2017 assessment results on ICT literacy and intervene with evidence-based approaches if no improvements are seen. The Department also needs to monitor student access to ICT and assess the impact of ICT resources on teacher use of technology and student learning outcomes.

Recommendations

By July 2018, the Department of Education should:

7. Identify the ICT skills students need, and provide teaching resources to develop these skills and monitor their achievement.

3.1 Students use ICT in most subjects

Students are using ICT to support their learning in most subject areas

The Department provides students with Office 365, G Suite and Adobe software packages to support learning across subject areas. Usage is increasing rapidly. For example, Microsoft OneDrive and Google Drive storage increased by 60 per cent from August 2016 to February 2017.

We observed varying ways students are using software in classrooms, including:

- using search engines and other resources to research
- preparing word documents or PowerPoint presentations
- practicing maths questions using specific software programs.

The Department has supported schools to incorporate ICT in project based learning in STEM (Science-Technology-Engineering-Maths) programs. For example, Canobolas Rural Technology High School has developed an integrated STEM program (Exhibit 3).

Exhibit 3: Integrated STEM program at Canobolas Rural Technology High School

Integrated STEM programs involve teaching Science, Technology, Engineering and Mathematics holistically in project-based activities. It uses an interdisciplinary approach to learning where students apply their knowledge and skills to real-world problem solving.

At Canobolas Rural Technology High School, Year 7 and 8 students complete a ten-week integrated STEM unit each term. Each unit complements the topics being studied in mainstream classes, allowing students to apply their newly developed knowledge to real world applications.

Canobolas is one of seven Action Schools to mentor and share innovative STEM practice and programs with other schools. The STEM New South Wales website also provides resources for schools to implement or adopt. For example, a teaching program and student workbook for the Canobolas project on clean drinking water.

Source: Canobolas Rural Technology High School, STEM NSW website.

3.2 Students need further support to develop ICT literacy

New South Wales student ICT literacy declined in most recent national assessment

The National Assessment Program – ICT Literacy tests a sample of Year 6 and Year 10 students every three years. In 2014, around half of New South Wales Year 6 and Year 10 students were assessed at a 'proficient' standard or above in ICT Literacy. This represents a 'challenging but reasonable' expectation for typical Year 6 and 10 students to have reached.

Results significantly declined for both Year 6 and 10 students between 2011 and 2014. The declines in New South Wales were greater than in most other States and Territories (see Exhibit 4).

Exhibit 4: Proportion (%) of students at or above proficient standard in ICT literacy

Year	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Aust
Year 6									
2011	66	64	55	59	62	51	74	42	62
2014	55	64	48	52	59	46	58	43	55
Year 10									
2011	66	68	63	61	63	54	72	48	65
2014	50	55	47	57	57	51	60	43	52

Source: Australian Curriculum Assessment and Reporting Agency, National Assessment Program ICT Literacy Report, 2014.

The Australian Curriculum, Assessment and Reporting Authority offered three possible explanations for the fall:

- the increased access to and use of mobile technology devices may mean that students are practicing fewer of the skills associated with ICT literacy
- changes in teaching and learning with ICT have resulted in less emphasis being placed on the teaching of skills associated with ICT literacy
- the development of ICT literacy has been taken for granted where the level of access to ICT in schooling and at home is extremely high.

The Department needs to monitor the results of the 2017 assessment. If results do not improve, it needs to consider whether students are receiving enough explicit opportunities to learn skills associated with ICT literacy and practice these at school or at home.

The Department does not centrally monitor or report on the digital literacy of students

Curriculum outcomes related to ICT capabilities are reported at a school level in relation to the relevant syllabus. The Department does not monitor or report on student outcomes at a State level. There is no assessment or reporting of cross-curriculum ICT general capability at a school or State level. Without any monitoring or reporting, there is a risk of developing gaps in student ICT capabilities between individual schools or regions.

The School Certificate Assessment previously tested the computer skills of Year 10 students. In 2011, almost all students were assessed as 'competent' or 'highly competent'. The computer skills assessment was dropped as a requirement from 2012 onwards.

The digital literacy of students varies at the point of entering high school

Secondary schools we visited reported that digital literacy of Year 7 students varies according to the primary school they attended. In response, some schools have developed local 'transition programs' to improve skill levels of Year 6 students before entering the secondary school. Other schools run dedicated ICT classes for Year 7 to instruct students on basic systems and software.

Some Primary schools we visited reported difficulty assessing the digital literacy levels of their students. This is because the skills that students should have are not set out clearly and

communicated at each stage. The Department could better support schools with tools and resources to assess student skill levels and provide targeted assistance where needed.

Students need targeted support to develop their digital literacy

Students are becoming increasingly competent with ICT in their personal lives as they have greater access to mobile devices than ever before. Students from disadvantaged backgrounds, however, have less access to computers at home.

Several schools we visited noted that teachers should not assume student skill levels based on access to mobile devices and that some targeted teaching to develop the skills needed to use ICT as a learning tool may be necessary. In 2016, the Department published case studies on several schools' experiences in online collaboration. Two case studies stressed that explicitly teaching students how to use online collaboration tools was essential to make the most impact.

3.3 Student access to ICT varies according to school background

Student access to ICT varies with the ability to supplement funding from other sources

The Technology for Learning program aims to provide at least one device for every eight students on a four-year replacement cycle. Schools supplement funding for ICT from general school budgets and contributions from Parent & Citizens Associations. The level of student access to ICT varies with the school's ability to raise funds from these sources, and how they prioritise between teacher and student devices, and other priorities.

Relying on school-based fundraising to supplement devices may contribute to broader inequities in access. For example, a 2016 survey of teachers indicated that secondary school students in lower socio-economic status areas had fewer opportunities to use technology compared to those in higher socio-economic status areas.

Student Bring Your Own Device schemes need to consider equity

Many schools are implementing student 'Bring Your Own Device' schemes to increase access and use of ICT in learning. Bring Your Own Device is an optional strategy for schools. The Department's guidelines ask schools to consider strategies to accommodate students without a device and we observed these arrangements in place at a selection of schools:

- one primary school with a Bring Your Own iPad program had funded a set of spare mini-iPads
- secondary schools used Digital Education Revolution program laptops.

The Commonwealth Digital Education Revolution program funded laptops for Year 9 students from 2009 to 2013. These laptops are now four years old and do not meet the Department's recommended performance specifications for Bring Your Own Device. Students relying on these laptops may be limited in being able to run demanding programs or applications. Several schools we interviewed reported to us they were unable to fund replacements once these laptops stopped working.

We observed that schools in higher socio-economic status areas had found implementing Bring Your Own Device schemes relatively easier, had greater proportions of students bringing devices and had to provide fewer spare devices for students without a device.

Schools need to consider the affordability of devices for their school community and consult carefully before implementing Bring Your Own Device schemes. Introducing these schemes in lower socio-economic status areas may require greater planning and funding for loan devices as families may struggle with costs. One school we visited in a low socio-economic status area had difficulties when it attempted to introduce a Bring Your Own Device. We observed that most students in this school did not bring a personal device to class. Teachers relied on school provided laptops or computer labs for students to use ICT.

ICT is improving equity for rural and regional students

The Department is using ICT to support equity for some student groups. For example, rural and distance education students (isolated students and students with complex needs) are using videoconferencing and online learning to improve access to specialist teachers. The Department has also established Aurora College for gifted and talented students living in rural and remote areas (Exhibit 5).

Exhibit 5: Aurora College

Aurora College uses ICT to allow talented students in rural and remote areas to remain in their local school and community while studying specialist subjects which their home school cannot offer. Classes commenced in 2015 and there are currently over 210 students enrolled.

Students connect with their teachers and classmates through a virtual learning environment. The College offers selective classes in English, Mathematics and Science for Year 7 to Year 10. Year 11 and 12 students can choose from twelve subjects that may not be available at their home school.

Students enrolled in the college report being intellectually engaged and this suggests a high-quality learning environment.

Source: New South Wales Department of Education.

Students in rural and regional areas have relatively better access to ICT compared to students in metropolitan areas. Looking at devices up to four years old, there are 4.2 students per device in rural and regional areas compared to 6.5 students per device in metropolitan areas.

Despite rural and regional students having relatively greater access to ICT, a 2016 survey of teachers indicated that secondary school students in these areas had fewer opportunities to use technology compared to those in metropolitan areas. This suggests teachers in rural and regional areas may require additional support to incorporate ICT into their classes.

Rural and regional schools will soon benefit from wireless network upgrades. The Connecting Country Schools program will improve wireless access and internet capacity in 914 regional and rural schools. This may produce inequitable wireless and internet access for students in schools not covered by this program.

Appendices

Appendix 1: Response from the Agency



Ms Margaret Crawford
Auditor-General of NSW
Audit Office of NSW
GPO Box 12
SYDNEY NSW 2001

DGL17/555

Dear Ms Crawford

I refer to your letter of 5 June 2017 inviting a response to the final NSW Auditor-General's Report, Performance Audit - ICT in schools for teaching and learning (your reference: PA6589).

The Department of Education welcomes the report as an opportunity to review and enhance our delivery and support of ICT for learning in schools

I note the constructive suggestions made in the recommendations of the report and attach a formal response from the department to be incorporated into the published report.

I can advise that the department accepts the report's recommendations.

I would like to thank the review team of the Audit Office for working with officers from the department to make this audit a worthwhile and constructive exercise.

Yours sincerely

A handwritten signature in black ink, appearing to read 'Mark Scott'.

Mark Scott AO
SECRETARY
DEPARTMENT OF EDUCATION
June 2017

A small handwritten mark or signature in black ink, possibly a stylized 'M' or 'S'.

NSW Department of Education
35 Bridge Street Sydney NSW 2000 GPO Box 33 Sydney NSW 2001 T 02 9561 8000 F 02 9561 8465
www.det.nsw.edu.au

The NSW Department of Education welcomes the NSW Auditor-General's report *Performance Audit – ICT in schools for teaching and learning*

The department recognises the importance of using technology for learning along with the need to develop the skills of our students and teachers in using technology effectively in daily life and work both now and in the future.

The department welcomes the NSW Auditor-General's report as an opportunity to highlight and enhance our approach to supporting ICT use in schools.

Recommendation 1: Review the Technology for Learning program and school ICT support resourcing to determine whether resourcing is adequate for modern school requirements.

The department's Information Technology Directorate will use the existing cross-directorate governance of the program to oversee a review of the program and develop a roadmap of action.

Recommendation 2: Develop a program to improve wireless networks in all NSW schools, for instance by expanding the Connecting Country Schools Program to all NSW schools.

The department's Information Technology Directorate will explore opportunities to expand 'Connecting Country Schools' or to provide an alternative path, for the ongoing enhancement of wireless networks in all schools.

Recommendation 3: Implement an assessment of school 'ICT maturity' and use this to target assistance to those schools requiring support with forward planning for ICT.

The department, through its Information Technology Directorate will continue to develop an ICT maturity tool to enhance our capabilities in monitoring and supporting the effective use of ICT in schools.

Recommendation 4: Improve the use of evidence to inform plans and strategies, including:

- ***more detailed monitoring of teacher and student access to and use of ICT***
- ***evaluating the impact of teacher professional learning on student outcomes***
- ***further examining the links between ICT and student outcomes.***

The department's Centre for Education Statistics and Evaluation (CESE) and Information Technology Directorates will work with Learning and Business Systems to explore the evidence base to support and inform the implementation of strategies to identify and provide professional learning for staff that evidence suggests links to improved outcomes for students.

Recommendation 5: Improve teacher access to devices for use outside of the classroom to improve how effectively they integrate ICT into teaching and learning.

The department will review its current approaches to provision of devices for use outside of the classroom by teachers and identify ways this can be improved at both a department and school level.

Recommendation 6: Improve teacher professional learning by providing more:

- online learning opportunities for teachers in regional and remote areas
- courses focused on pedagogy to make best use of ICT.

The department will develop and implement a strategic plan for improving online and ICT professional learning opportunities for teachers and leaders in schools.

Recommendation 7: Identify the ICT skills students' need, and provide teaching resources to develop these skills and monitor their achievement.

The department will review current research and make available a suite of resources to help teachers and students in the effective use of ICT. These digital resources will be monitored through analysis of data.

Appendix 2: About the audit

Audit objective

This audit assessed how well New South Wales public schools are using information and communications technologies to improve teaching and learning.

Audit criteria

We addressed the audit objective by answering the following questions:

1. Does the Department identify key strategic opportunities to enhance the use of ICT platforms and technologies in schools?
2. Are teachers integrating ICT into classroom practice?
3. Does the Department monitor the impact of ICT on student learning?

We broadly define 'ICT' as encompassing hardware, software, internet-based applications, network infrastructure and supporting equipment.

Audit scope and focus

For Question 1 we assessed the extent to which:

- the Department plans for current and future ICT needs in schools
- schools tailor plans for enhancement of ICT within the context of departmental policies and in consideration of local needs
- Departmental approaches to ICT use in schools are based on sound evidence.

For Question 2 we assessed the extent to which:

- teachers are supported to develop their skills in using ICT for teaching
- teachers have access to resources and know how to integrate these
- the Department provides guidance to teachers on the best use of ICT in the classroom environment.

For Question 3 we assessed the extent to which:

- ICT is being effectively used to support student learning across a range of subject areas
- students are improving their abilities in using new technologies to support learning
- students have equitable access to technology, software and hardware that supports learning opportunities.

Audit exclusions

The audit did not specifically assess:

- the Learning Management and Business Reform program
- early childhood education or Vocational Education and Training in schools
- assistive technologies for students with disability or special learning needs
- work of the New South Wales Education Standards Authority.

However, we may have commented on these issues/areas where they affect our findings and to provide context.

Audit approach

Our procedures were:

1. Reviewing documents in areas including:
 - research on ICT in schools produced or commissioned by the Department

- best-practice examples or resources produced or commissioned by the Department
 - policies and procedures relating to use of ICT in schools
2. Analysing data relating to:
 - professional learning in ICT-related areas
 - a survey of teachers reporting on their use of ICT
 - usage of online learning resources by teachers and students
 - number, distribution and age of ICT assets in schools
 3. Interviewing staff from the Department, including
 - executives and managers with responsibility for supporting ICT in schools
 - school principals, deputy/assistant principals and ICT coordinators.

The audit approach was complemented by quality assurance processes within the Audit Office to ensure compliance with professional standards.

Fieldwork visits

We also visited eight public schools. We based our selection on the following factors:

- Location - schools in inner-metropolitan, outer-metropolitan and regional areas
- School level - primary and secondary schools
- Socio-economic influences.

Primary schools	Secondary schools
Blackett Public School	Colyton High School
Fairy Meadow Demonstration School	Keira High School
Lindfield East Public School	Killarney Heights High School
Nemingha Public School	Tamworth High School

Audit methodology

Our performance audit methodology is designed to satisfy Australian Audit Standards ASAE 3500 on performance auditing. The Standard requires the audit team to comply with relevant ethical requirements and plan and perform the audit to obtain reasonable assurance and draw a conclusion on the audit objective. Our processes have also been designed to comply with the auditing requirements specified in the *Public Finance and Audit Act 1983*.

Acknowledgements

We gratefully acknowledge the co-operation and assistance provided by staff at the Department of Education who gave their time to participate in interviews and provide documents and data. We also thank the other stakeholders that made the time to speak to us during the audit.

Audit team

Kevin Hughes conducted the performance audit. Claudia Migotto and Michael Thistlethwaite provided direction and quality assurance.

Audit cost

The cost of the audit was approximately \$180,729 including overheads and travel costs.

Performance auditing

What are performance audits?

Performance audits determine whether an agency is carrying out its activities effectively, and doing so economically and efficiently and in compliance with all relevant laws.

The activities examined by a performance audit may include a government program, all or part of a government agency or consider particular issues which affect the whole public sector. They cannot question the merits of government policy objectives.

The Auditor-General's mandate to undertake performance audits is set out in the *Public Finance and Audit Act 1983*.

Why do we conduct performance audits?

Performance audits provide independent assurance to parliament and the public.

Through their recommendations, performance audits seek to improve the efficiency and effectiveness of government agencies so that the community receives value for money from government services.

Performance audits also focus on assisting accountability processes by holding managers to account for agency performance.

Performance audits are selected at the discretion of the Auditor-General who seeks input from parliamentarians, the public, agencies and Audit Office research.

What happens during the phases of a performance audit?

Performance audits have three key phases: planning, fieldwork and report writing. They can take up to nine months to complete, depending on the audit's scope.

During the planning phase the audit team develops an understanding of agency activities and defines the objective and scope of the audit.

The planning phase also identifies the audit criteria. These are standards of performance against which the agency or program activities are assessed. Criteria may be based on best practice, government targets, benchmarks or published guidelines.

At the completion of fieldwork the audit team meets with agency management to discuss all significant matters arising out of the audit. Following this, a draft performance audit report is prepared.

The audit team then meets with agency management to check that facts presented in the draft report are accurate and that recommendations are practical and appropriate.

A final report is then provided to the CEO for comment. The relevant minister and the Treasurer are also provided with a copy of the final report. The report tabled in parliament includes a response from the CEO on the report's conclusion and recommendations. In multiple agency performance audits there may be responses from more than one agency or from a nominated coordinating agency.

Do we check to see if recommendations have been implemented?

Following the tabling of the report in parliament, agencies are requested to advise the Audit Office on action taken, or proposed, against each of the report's recommendations. It is usual for agency audit committees to monitor progress with the implementation of recommendations.

In addition, it is the practice of Parliament's Public Accounts Committee (PAC) to conduct reviews or hold inquiries into matters raised in performance audit reports. The reviews and inquiries are usually held 12 months after the report is tabled. These reports are available on the parliamentary website.

Who audits the auditors?

Our performance audits are subject to internal and external quality reviews against relevant Australian and international standards.

Internal quality control review of each audit ensures compliance with Australian assurance standards. Periodic review by other Audit Offices tests our activities against best practice.

The PAC is also responsible for overseeing the performance of the Audit Office and conducts a review of our operations every four years. The review's report is tabled in parliament and available on its website.

Who pays for performance audits?

No fee is charged for performance audits. Our performance audit services are funded by the NSW Parliament.

Further information and copies of reports

For further information, including copies of performance audit reports and a list of audits currently in progress, please see our website www.audit.nsw.gov.au or contact us on 9275 7100.

Our vision

Making a difference through audit excellence.

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