A brief look inside a school classroom is all it takes to see that information technology rules learning for primary and secondary students in Australia.

Computers in all shapes and forms on desks, students staring intensely at screens, and silence or quiet murmurings are the norm, not the exception.

Assignments are cast online and children reveal a familiarity with computers that they once possessed with sporting equipment.

Welcome to learning in the 21st century. And this is only the tip of the iceberg.

IBISWorld forecasts the revenue generated by Australia’s online education industry will increase 10.6 per cent this year to almost $4.9 billion. Factors contributing to this growth include continued high-speed internet services, growing acceptance of online education, government financial support of students and efforts to expand access beyond the typical school-leaver demographic.

The Cisco Visual Networking Index says Australia’s consumer internet video traffic grew 55 per cent last year. Cisco forecasts that by 2015, internet video traffic will be 81 per cent of all Australian consumer internet traffic, up from 50 per cent in 2010.

The Australian Bureau of Statistics says home internet access is more common in households with children younger than 15. Ninety-three per cent of those households have internet access, compared with 74 per cent of other households.

The federal government is spending $2.1 billion on the Digital Education Revolution (DER), which supports initiatives such as the National Secondary Schools Computer Fund, the National Schools Interoperability Program, the Australian Curriculum Connect Project and the Supporting the Australian Curriculum Online program.

Other DER funding includes the ICT Innovation Fund projects intended to help teachers and school leaders embrace technology, encourage teachers to creatively and effectively integrate the use of ICT into the classroom, and build pre-service teacher capability in this area.

All funds are heading in one direction – more online learning and better-resourced schools to facilitate that.

If the reforms of the Gonski review are

Continued on next page
Bringing TECH to TEACHing

Introduced, every classroom in every school will have computers.

But as children are being exposed to technology in the classroom, at home and on the way home with their smart phones and iPads, are we getting the balance right? What is new technology helping them learn and what are they missing out on? Can we ensure that the education they receive online is what we really want them to know?

"In terms of online learning, the less beneficial aspects relate to the different types of or lack of interpersonal relationships developed," says Jocelyn Brewer, a school counsellor and psychologist. "It’s very different to have mates to interact with IRL [in real life] versus an online buddy who you only type short sentences to.

"There might be issues around the lack of scaffolding of activities and developing really sound assessments which use a range of cognitive skills, not just cutting and pasting information from different sources. Kids need to be taught how to critically analyse sources of information and their creators. Teachers are never going to be effectively replaced by computers."

Brewer founded the National Network for Internet Research and Research Australia, an independent, not-for-profit website (www.nira.org.au) dedicated to information about the internet and wellbeing, especially for children and adolescents.

The network sees the overall impact of the internet as positive but accepts that for a minority it can lead to social, educational and behavioural difficulties.

"Designing e-learning is an art itself and requires teachers to be upskilled in the technology, preferably yesterday," Brewer says. "There is a lag between the real innovation with using technology to engage kids we are losing in traditional education settings. They are not performing, teachers have difficulties with discipline and kids just want to use their smart phones all the time.

"Healthy screen time is really dependent on the age of the kid. Two hours a day of violent video games for a HSC student would be worse than eight hours a day of researching, commenting on subject-based discussions and watching science or informative videos. While there is no agreed amount of healthy versus unhealthy time, there is a consideration to the age and needs of students."

Mentone Girls' Grammar School in Victoria has established an e-learning platform called the Virtual Campus that provides online classrooms for every subject.

It is an extensive learning platform designed for the school that provides productivity features for teachers such as attendance marking, resource bookings and assessment record keeping. Teachers can use it to contact individual students, whole classes, parents and groups of colleagues regarding individual students.

"The Virtual Campus is available anywhere, anytime and the virtual classrooms are all customised learning environments to suit particular subjects and learning activities," says the principal, Fran Reddam.

"Teachers' creativity and collaboration have been enhanced as they work together to create exciting virtual classrooms. They include blogs, wikis, movies and a whole range of communication tools.

"This has provided so many possibilities to make the subject content more powerful and more elaborate, which we know from the latest brain research makes
Linking educators

The NSW government is working with education providers, teachers, software providers and other groups to use cutting-edge technology and best-practice methodology to empower all educators to learn, create, collaborate, innovate and transform their teaching practices to inspire and enable their own students.

The network is known as PLANE, an acronym for Pathways for Learning, Anywhere, anytime - a Network for Educators. The website is www.plane.edu.au.

"The idea for PLANE came from a group of teachers working in the digital education revolution team in NSW," says Roisin O'Reilly, PLANE program manager.

"They consulted with groups across the education sectors and considered how to provide equitable support for teacher professional learning across NSW.

"PLANE empowers individual teachers, teams in schools and groups of schools to connect and learn, to share their teaching strategies, be reflective about their learning and to evidence their learning through a digital portfolio.

"PLANE is a learning community designed by educators for educators. In addition to anytime-anywhere learning through the PLANE website, there is also hosted synchronous online learning through our virtual TeachMeets and LeadMeets.

"These are excellent opportunities for teachers and leaders to share best practice and to learn from each other."

"No one person, system or sector can hold responsibility for keeping teachers up to date with the latest technology," O'Reilly says.

"It is an impossible task. PLANE provides a good one-stop shop for the latest ideas, and students and educator colleagues are a fantastic source of information.

"With rapid technology change it is even more important for educators to work collaboratively with others in their professional learning journeys."

PLANE is managed by a consortium consisting of the NSW Department of Education and Communities, the Catholic Education Commission NSW, the Association of Independent Schools NSW and the Council of Deans of Education NSW together with industry partners Adobe and Microsoft.

Learning deeper. Students in Years 7 and 8 have iPads and readily connect to the Virtual Campus every day. Students from Years 9 to 12 BYOD [bring their own device] or borrow one from the school's own-or-loan program.

"Learning online is not the same as learning in a classroom, but both provide benefits. Smart schools will incorporate both well into the future."

But can so much online learning result in a well-rounded education? What impact does it have on children's social and communication skills?

"There is a focus on online learning but it is not universal and the quality of the practice is not consistent," says Sheree Vertigan, president of the Australian Secondary Principals Association.

"It can be a powerful medium or platform to enrich teaching and learning, and it has the capacity to reconnect the disengaged, satisfy another learning style and provide students with access to vast knowledge or resources, but it is about how that is used in the teaching and learning program."

"IT is not the universal panacea but it is critical that students understand both assets and liabilities of IT."

"After all, they are 21st century citizens and IT is all-encompassing. Both good and bad online teaching and learning will impact on everyday learning for secondary school students because it is about it is used and how it connects to what the student needs to know, do and understand."

Another question is how remote schools keep up with online learning. Many are disadvantaged due to poor internet connections and slow download speeds.

"This will be a huge challenge but it is not only schools in remote areas," Vertigan says.

"There is the issue of access to IT out of school time and we know that this is an issue in many communities that are in large urban centres. As we move towards bring your own device, then there will be many equity issues to be addressed. It has the potential to be another thing to widen the gap between school communities."

But in primary schools, we face different challenges with children learning from a young age by computer screen rather than interactive teaching. Do we want our children to grow up as zombies?

"We must rely on teacher judgment to plan for a balance between different modes of learning so that knowledge and skills are developed along with healthy dispositions to learning and positive attitudes about self, others and the world in which we live," says Norm Hart, president of the Australian Primary Principals Association.

"Time spent interacting with all sorts of devices seldom contains much physical activity. Schools, sporting and cultural organisations for children and families must all work together to encourage children to make healthy choices.

"No one person, system or sector can hold responsibility for keeping teachers up to date with the latest technology," O'Reilly says.

"It is an impossible task. PLANE provides a good one-stop shop for the latest ideas, and students and educator colleagues are a fantastic source of information.

"With rapid technology change it is even more important for educators to work collaboratively with others in their professional learning journeys."

PLANE is managed by a consortium consisting of the NSW Department of Education and Communities, the Catholic Education Commission NSW, the Association of Independent Schools NSW and the Council of Deans of Education NSW together with industry partners Adobe and Microsoft.

Learning deeper. Students in Years 7 and 8 have iPads and readily connect to the Virtual Campus every day. Students from Years 9 to 12 BYOD [bring their own device] or borrow one from the school's own-or-loan program.

"Learning online is not the same as learning in a classroom, but both provide benefits. Smart schools will incorporate both well into the future."

But can so much online learning result in a well-rounded education? What impact does it have on children's social and communication skills?

"There is a focus on online learning but it is not universal and the quality of the practice is not consistent," says Sheree Vertigan, president of the Australian Secondary Principals Association.

"It can be a powerful medium or platform to enrich teaching and learning, and it has the capacity to reconnect the disengaged, satisfy another learning style and provide students with access to vast knowledge or resources, but it is about how that is used in the teaching and learning program."

"IT is not the universal panacea but it is critical that students understand both assets and liabilities of IT."

"After all, they are 21st century citizens and IT is all-encompassing. Both good and bad online teaching and learning will impact on everyday learning for secondary school students because it is about it is used and how it connects to what the student needs to know, do and understand."

Another question is how remote schools keep up with online learning. Many are disadvantaged due to poor internet connections and slow download speeds.

"This will be a huge challenge but it is not only schools in remote areas," Vertigan says.

"There is the issue of access to IT out of school time and we know that this is an issue in many communities that are in large urban centres. As we move towards bring your own device, then there will be many equity issues to be addressed. It has the potential to be another thing to widen the gap between school communities."

But in primary schools, we face different challenges with children learning from a young age by computer screen rather than interactive teaching. Do we want our children to grow up as zombies?

"We must rely on teacher judgment to plan for a balance between different modes of learning so that knowledge and skills are developed along with healthy dispositions to learning and positive attitudes about self, others and the world in which we live," says Norm Hart, president of the Australian Primary Principals Association.

"Time spent interacting with all sorts of devices seldom contains much physical activity. Schools, sporting and cultural organisations for children and families must all work together to encourage children to make healthy choices.

"No one person, system or sector can hold responsibility for keeping teachers up to date with the latest technology," O'Reilly says.

"It is an impossible task. PLANE provides a good one-stop shop for the latest ideas, and students and educator colleagues are a fantastic source of information.

"With rapid technology change it is even more important for educators to work collaboratively with others in their professional learning journeys."

PLANE is managed by a consortium consisting of the NSW Department of Education and Communities, the Catholic Education Commission NSW, the Association of Independent Schools NSW and the Council of Deans of Education NSW together with industry partners Adobe and Microsoft.

Learning deeper. Students in Years 7 and 8 have iPads and readily connect to the Virtual Campus every day. Students from Years 9 to 12 BYOD [bring their own device] or borrow one from the school's own-or-loan program.

"Learning online is not the same as learning in a classroom, but both provide benefits. Smart schools will incorporate both well into the future."

But can so much online learning result in a well-rounded education? What impact does it have on children's social and communication skills?

"There is a focus on online learning but it is not universal and the quality of the practice is not consistent," says Sheree Vertigan, president of the Australian Secondary Principals Association.

"It can be a powerful medium or platform to enrich teaching and learning, and it has the capacity to reconnect the disengaged, satisfy another learning style and provide students with access to vast knowledge or resources, but it is about how that is used in the teaching and learning program."

"IT is not the universal panacea but it is critical that students understand both assets and liabilities of IT."

"After all, they are 21st century citizens and IT is all-encompassing. Both good and bad online teaching and learning will impact on everyday learning for secondary school students because it is about it is used and how it connects to what the student needs to know, do and understand."

Another question is how remote schools keep up with online learning. Many are disadvantaged due to poor internet connections and slow download speeds.

"This will be a huge challenge but it is not only schools in remote areas," Vertigan says.

"There is the issue of access to IT out of school time and we know that this is an issue in many communities that are in large urban centres. As we move towards bring your own device, then there will be many equity issues to be addressed. It has the potential to be another thing to widen the gap between school communities."

But in primary schools, we face different challenges with children learning from a young age by computer screen rather than interactive teaching. Do we want our children to grow up as zombies?

"We must rely on teacher judgment to plan for a balance between different modes of learning so that knowledge and skills are developed along with healthy dispositions to learning and positive attitudes about self, others and the world in which we live," says Norm Hart, president of the Australian Primary Principals Association.

"Time spent interacting with all sorts of devices seldom contains much physical activity. Schools, sporting and cultural organisations for children and families must all work together to encourage children to make healthy choices.
Bringing **TECH to TEACHing**

From previous page

about lifestyle. Overall Hart believes online technology is more positive than negative for primary school children.

"The impact is overwhelmingly positive, with students able to research topics of interest and interact in real time with experts and thought leaders in areas that interest them," he says.

"There are also opportunities to practice social skills in an online community. In terms of more traditional social skills, schools continue to play a significant role in ensuring they are accepted by every student."

While many agree that technology is benefiting our children, we must be aware that it is a supplement to learning, not the facilitator.

Children of all ages need a balanced lifestyle including regular physical activity, one-to-one and group interaction with friends, and exposure to traditional methods of teaching which have stood the test of time.

---

**Better literacy**

Literacy Planet (www.literacyplanet.com) was established to let students, teachers and parents learn anywhere. The idea is to ensure learning is fun. Comprehensive diagnostics and interactive content ensure nothing is left to chance. The key areas of English literacy are covered, such as pre-reading, phonics, spelling, vocabulary, fluency, grammar and comprehension skills.

"Literacy Planet was an opportunity to really push the e-learning boundaries," says Shane Davis, founder and executive director of Intrepica, the company behind the website.

"We wanted to create a literacy program that made a difference, not just because it has great content, but also because it is evolutionary."

"Since launching in 2009, we are continually adapting to the rapidly changing digital landscape. Staying relevant to the needs of teachers and students is our number one priority."

Literacy Planet has more than 10,000 exercises and students can compete with others online. When implemented in the classroom, it supports teacher instruction by providing students with innovative and engaging learning exercises. Teachers can assign classwork or homework, and students can work independently with minimal supervision.

"Literacy Planet is more than just a website," Davis says. "It is a serious game designed to drive student achievement, with live data keeping teachers and parents informed and in control. Students are subscribed as either a school or home user, with 24/7 access from anywhere in the world."

The website doesn’t allow direct student contact and students can only communicate using pre-programmed Literacy Planet messages. Social interaction cannot be explicit or negative and no personal information is displayed.

"Whilst online learning is an exciting step forward in education, there is a need for schools to maintain a balanced approach," Davis says. "Supporting the development of socialisation skills, promoting physical activity through sporting programs and employing traditional teaching methods are all important."

---

**Managing learning**

IN 2009, Morton Bay College created a team of 10 teachers, department heads and librarians to explore different learning management systems (LMS). The team prepared a list of criteria and asked potential system providers to demonstrate their products.

The college is an independent school in Brisbane catering for girls from preparatory through to Year 12. "The college chose a system called Moodle, an open-source system which is free to use," says Dr Deborah Priest, head of the college.

"For the remainder of 2009 the team learned how to use the learning tool to full effect and in 2010 we asked a selection of teachers to trial the new system. In 2011 we officially launched the program and are currently in the ongoing implementation, development and review stage."

In its simplest form, students log in to the platform and access a range of information materials relevant to their subjects. They can access their unit outlines, unit resources, assignments, worksheets and involve themselves in forums and blogs. But like every diligent school, checks are in place to ensure the content and use of the system is appropriate and relevant.

"Morton Bay College conducts an audit of the learning management system twice a year," Priest says. "This is a chance to look at which subjects have a high online engagement with students and which do not. Teachers monitor each site within the LMS on a day-to-day basis. We have a proactive and comprehensive cyber safety program in place at the college," Priest says.

"Each year the college makes presentations to our primary students that are informed by the latest information released by the Australian Communications and Media Authority. Separate sessions to the secondary students, college staff and parents are provided throughout the year by college staff."

"We also have lessons dedicated to cyber safety and we are constantly raising student awareness in subjects where information technology is used."

Although there is debate about what students can learn online, Morton Bay College is bullish about its advantages.