

**EDUCATION AND HEALTH
STANDING COMMITTEE**

**AN INQUIRY INTO IMPROVING EDUCATIONAL OUTCOMES
FOR WESTERN AUSTRALIANS OF ALL AGES**

**TRANSCRIPT OF EVIDENCE
TAKEN AT PERTH
WEDNESDAY, 21 MARCH 2012**

Members

**Dr J.M. Woollard (Chairman)
Mr P.B. Watson (Deputy Chairman)
Dr G.G. Jacobs
Ms L.L. Baker
Mr P. Abetz**

Hearing commenced at 10.26 am

BEVAN, MS DEBORAH NALL

Manager, e-Schooling, Department of Education, examined:

HALE, MR LINDSAY ROBERT

Acting Executive Director, Statewide Planning and Delivery, Department of Education, examined:

DOYLE, MR BEVAN

Chief Information Officer, Department of Education, examined:

The CHAIRMAN: On behalf of the Education and Health Standing Committee, I would like to thank you for your interest and your appearance before us today. The purpose of this hearing is to assist the committee in gathering evidence for its inquiry into improving educational outcomes for Western Australians of all ages. The Education and Health Standing Committee is a committee of the Legislative Assembly. This hearing is a formal procedure of the Parliament and therefore commands the same respect given to proceedings in the house. This is a public hearing and Hansard will be making a transcript of the proceedings for the public record. If you refer to any document or documents during your evidence, it would assist Hansard if you could provide the full title for the record. Before we proceed to the questions that we have for you today, I need to check have you completed the "Details of Witness" form.

The Witnesses: Yes.

The CHAIRMAN: Do you understand the notes at the bottom of the form about giving evidence to a parliamentary committee?

The Witnesses: Yes.

The CHAIRMAN: Did you receive and read the information for witnesses briefing sheet provided with the "Details of Witness" form today?

The Witnesses: Yes.

The CHAIRMAN: Do you have any questions in relation to being a witness at today's hearing?

The Witnesses: No.

Mr P. ABETZ: Just before we start, unfortunately several of us need to leave at 11 o'clock. We are not leaving because we do not like what you are saying! It is just an apology for when we need to make that move.

The CHAIRMAN: You have received a copy of the terms of reference for this inquiry. Just in the few months that we have been going now, we have realised that information technology and e-learning is a big problem in both metropolitan schools and regional schools. What we might do before we ask you some questions is ask each of you to give a summary of your role with particular reference to the issues that we want to cover as part of our inquiry. Once you have each given a general presentation, then we will come back with questions for you.

Mr Doyle: As the chief information officer, I am in charge of the technology arm of the department, if you like. I provide strategic leadership and guidance to the system about the use and

applications of the technology. That covers not only schools, but also the whole corporate structure. It covers the desktop device down to the local area networks and wide area telecommunications networks, technical development of systems, tools, technologies, delivery of web services to schools and other centralised services, including corporate applications such as payroll and financial systems for the organisations. It is a widespread role, if you like, in terms of technology. Obviously, the chief focus of the Department of Education is to try to maximise the value of education in terms of technologies in the classroom. It is a very big and complex organisation technically. There are 150 000 computers on our network. It is a very large and complex technical environment. We run email systems and collaboration tools. There are up to a billion emails a year that we get through our gateway. We deliver to schools services such as the internet, where you will get about 30 terabytes of data per month being delivered to schools. That is my role in a nutshell in terms of the complex world of technology in education.

The CHAIRMAN: We might go round and then we might come back and try to get you to break down this monster that you control for us. You are the expert and we are the novices and we need to understand how that great big pathway works.

Mr Doyle: Absolutely; I will do that.

Mr Hale: My role as acting executive director for statewide planning covers a number of related areas. I guess they are a combination of what you might describe as hard and soft infrastructure. It goes to the issue of planning for schools, but also for the various supports that go with that, one of which is online learning, another is professional learning for our staff and another is regional development. I also have some responsibility for agricultural education, but that is probably not directly relevant here. That role is much less the technical delivery role that Bevan has and much more strategic planning as to how best to utilise and take advantage of online capacity. From my perspective in the role I am in, that really is about the inextricable linkage between student learning directly through online learning, teacher capacity and school leadership capacity through professional learning and just our system communication that supports both those things, particularly in relation to data and information sharing with a particular interest, I suppose, in terms of regional development in relation to the opportunities that online capacity presents us to fulfil our statewide obligations, which is otherwise obviously very difficult and becoming increasingly expensive and challenging.

Ms Bevan: My role is the manager of e-schooling, which is one of the arms of the directorates that Lindsay is the executive director of. E-schooling is concerned with the softer side of the technological impact in schools and acts as the business voice for schools, teachers, students and, increasingly, parents as an audience type to be involved in the impact of the technology and the use of the services in classrooms. As an e-schooling branch, we are interested in leadership programs for principals and in professional learning programs for teachers to help them understand the new ways that they can deliver schooling. It is also a responsibility of e-schooling to be involved in school-driven consultation and to ensure that we can capture the varying needs of all schools and attempt to provide a suite of services that all schools can take advantage of. We are also involved in software development in that we are the business voice representing the needs of teachers and students as we develop services with software developers.

Mr P. ABETZ: What do you mean by “the business voice”?

Ms Bevan: The business voice is the voice of the user and that business of school, so I am saying the school business.

Mr P.B. WATSON: We have got all this IT, but what sort of training, especially in regional areas, is provided for the users? We were advised that a lot of schools have not got a specific officer and that principals, vice-principals and other people are doing the work in the schools. Is there enough training, especially in regional areas? If it breaks down in a regional area, you have got huge problems because you have not got the backup that you have in the city.

Mr Hale: Can we just clarify the question because I think it might go to two issues? I am not sure whether you are asking about technical support or the actual application of online learning —

Mr P.B. WATSON: Technical support. Most of the time the schools in my electorate just say that it has broken down and no-one can fix it, or the phys ed guy has a look at it and things like that.

Mr Doyle: I can answer that. Technical support is an issue in some of the schools. Schools have a variety of ways in which they address that. Most, if not all, of the bigger schools would have at least one permanent technician on staff, and at lesser degrees of time as the school gets a bit smaller, it is a priority within the schools.

The CHAIRMAN: That is not funded as one FTE, though, from the Department of Education; they have to find that funding from the school budget.

Mr Doyle: It is a priority within the school as to what their staffing establishment is and where their priorities are. So the school will decide the make-up of that staff. As I said, the big schools, which are virtually small enterprises technically, will have a technician on staff. The other arrangements are through what we call the ICT grant. Schools first of all have to maintain a minimum ratio of devices on the student's desk. Once that money is spent, they have got other options on which they can spend that money, and that includes technical support arrangements by contracting in what we call a systems integrator, which is a technical support contractor. Others choose to use a parent or a guardian. One school had the gardener doing it for a while because they had a bit of technical knowledge.

Mr P.B. WATSON: Is that good enough?

Mr Doyle: It is not. The difficulty in country areas, of course, is that the further out you get, the harder it is to get those skills.

The CHAIRMAN: How much is the ICT grant?

Mr Doyle: Approximately \$18 million a year goes out to schools.

The CHAIRMAN: Is that based on the number of students at the schools and the geographic location or simply the number of students?

Mr Doyle: It is both. It has a number of elements in it.

The CHAIRMAN: Could we have by way of supplementary information the formula for that ICT grant funding?

Mr Doyle: Sure.

The CHAIRMAN: Could you explain what SOE4 and SOE5 are? You talked about all this information going in. We know that schools run different systems. Could you tell us what are the different systems that the schools are running and how the SOE4 and SOE5 fit into this?

Mr Doyle: There are a number of ways we tackle technical support. First of all, it is in strategic contracts around devices, equipment and those sorts of things so there is a reasonable standard across the organisation. That then enables a sharing of resources and understanding. We have a central office customer service centre that provides support to schools in terms of a number of devices on the school site, particularly all their admin network and admin systems. Where we can help out in the classroom, we do. If they run into a particular problem on their networks that is rather complex, we will help and assist from the centre.

The CHAIRMAN: Is that a free service?

Mr Doyle: Yes. There is no charge to the schools for that.

Mr P. ABETZ: Is that through remote or does somebody actually come out?

Mr Doyle: It is both. Because of our rather wide-ranging networks, we can remotely access devices and have a look at those devices with the cooperation of someone at the school, or we will visit. A major breakdown in the network generally requires a visit.

Mr P.B. WATSON: Bevan, you talked about some of the smaller schools in regional areas. Have you ever thought of putting in an FTE to cover three or four schools like in a situation in Albany where they have a lot of trouble getting the people to do it? Have you looked at getting an FTE—you cannot put him in the district education office because you have not got one anymore, but I am sure you could find a spot in the school for him—so that that person would be available to three or four schools?

Mr Doyle: Obviously, the funding for that has not been found yet, but certainly there are a number of models. We are working with senior high schools, for example, to cluster them up. The senior high school could possibly provide additional service to those smaller feeder schools that are in the district and those sorts of things to maximise the use, again, across networks and using technologies to help that out.

The CHAIRMAN: Could we go back to the different programs that are running in the different schools? What are the SOE4 and SOE5?

Mr Doyle: I will deal with the programs that we are running first. If we look at the building blocks of what we are doing, we have a major telecommunications network right across the state that connects all our schools. It is one of the largest privately owned—if I can use that phrase—networks in Australia. It connects schools with up to 10-megabit telecommunication services, which is quite a large pipe for the transmission of data.

The CHAIRMAN: Is that a network or is that through satellites for remote and regional areas?

Mr Doyle: Most of it is through fixed terrestrial fibre.

The CHAIRMAN: So most of it is through a line under the ground?

Mr Doyle: Correct. There are 36 satellite sites and about 170-odd that are still copper, but the copper is just the carriage thing, so it is still quite a reasonable network.

The CHAIRMAN: What is the copper?

Mr Doyle: It is just the old Telstra copper telephone wire. But we use technology obviously to get bandwidth down those various carriageways. Smaller regional schools have one megabit connections, and that is purely because of the prohibitive cost of that. We are hoping that NBN at some time in the future might be able to reduce some of those costs, but we are waiting to see what the impact is of NBN.

[10.42 am]

Mr P.B. WATSON: We have a situation in Many Peaks where the school has got broadband, but the community does not. We still have not worked out how they got it. No-one can say, but it cost about \$18 000.

Mr Doyle: It does, it is an annual cost; it is your telephone bill. We have a telephone bill of around \$18.5 million a year, which is our data and telecommunications cost for delivering those to schools.

The CHAIRMAN: You said optic, copper or satellite.

Mr Doyle: Yes, fibre, satellite or copper.

The CHAIRMAN: Is the cost and the speed similar for the schools, whether they use optic, copper or satellite?

Mr Doyle: No, it is not. Satellite is always a lesser bandwidth solution because of the nature of that technology.

Mr P.B. WATSON: And slower?

Mr Doyle: It can be. It has dependency on climate, weather and dust?

The CHAIRMAN: And cost?

Mr Doyle: I do not have the actual broken down telecommunications cost for the satellite but we can get that for you.

Mr P. ABETZ: It is dearer than optic fibre, obviously.

Mr Doyle: It is not. It is not as good a solution. Is it better value to have the optic fibre? You cannot afford to get it somewhere like Wangkatjungka. It is a bit of a spread sometimes.

The CHAIRMAN: For access to and from, whether a school is using fibre, copper or satellite, does the school pay for how much they use?

Mr Doyle: No.

The CHAIRMAN: Does that not come —

Mr Doyle: The telephone bill is paid at the centre.

The CHAIRMAN: That is how it gets there. We have recently come back from the Pilbara and the Kimberley and were told how different schools run different programs and how schools in one location could not talk to one other. What are these different programs and why can they not talk to one another?

Mr P. ABETZ: Different platforms.

The CHAIRMAN: Sorry, platforms.

Mr Doyle: I am not quite sure what they would have been referring to but the way the network is designed, they can communicate with each other. It is possible to communicate between schools.

Mr P.B. WATSON: Is this regional to city?

Mr Doyle: Anywhere across the network. It can be regional to city; it can be region to region; it can be one to many; many to one sort of places.

Mr P.B. WATSON: I think the problem in Karratha is that, as the headmaster said, as soon as the guys come off the minesite they all crank up their computers and iPads and the system slows right down.

Mr Doyle: In the school?

Mr P.B. WATSON: Yes, the whole system slows down.

Mr Doyle: In the town or the school?

The CHAIRMAN: I think it is in the town because they were saying the afternoon shift —

Mr P. ABETZ: It affects the school. They reckon it affects the school as well in terms of the speed of it.

The CHAIRMAN: Maybe it is the night workers coming off and slowing things down during the school day for the school children.

Mr Doyle: I would be surprised if that was an influence on our network because they are separate. It is not as if they are all dependent on each other and on the same line.

The CHAIRMAN: Is it meant to be a dedicated line?

Mr Doyle: It is a dedicated line to the school. It is a private network; it is not part of the public domain.

The CHAIRMAN: What are the different platforms that they run?

Mr Doyle: Schools operate any type of software they believe is educationally of value to them and their kids. The software issue is quite difficult. They should not have problems communicating.

This is why we are doing that thing called a “standard operating environment”. It is much simpler for schools to do that cross-communication.

The CHAIRMAN: But are the platforms Mac, DOSS, Linux? What are the platforms?

Mr Doyle: We have Windows and the Apple operating systems and Linux is a server platform that we use at central office. They generally inter-operate okay, if you can use a word like that. Apple devices will have a bit of difficulty with our legacy school administration system because we are looking to upgrade that sometime in the future, but it is predominantly a PC access base for Windows.

The CHAIRMAN: The platforms are the base programs?

Mr Doyle: They are called the operating systems.

The CHAIRMAN: Can you now explain to us what the SOE is?

Mr Doyle: The SOE is really just a standardisation across the network.

The CHAIRMAN: Standardisation operating what? What is the E for?

Mr Doyle: It is the technical standard within a network. If I can simplify it for you: we have built all these roads, and traffic starts to flow on those roads. We have a standard operating environment on our streets, if you like. There are octagonal signs; there are red, green and yellow lights; there are triangular signs. They are all telling you something about the system. In technical terms, we are placing those types of things in our network so that it can control and manage the flow of traffic across the networks. If you standardise and someone tries to drive on the right-hand side of the road and those types of things, that is when you have a problem in communicating. If a school gets too radically different from everywhere else, then you will have a conflict.

Mr P.B. WATSON: How do you mean “radically different”? Surely it is just the one pathway?

Mr Doyle: It is, except if you want to use the wrong technologies that do not fit, they cannot communicate. They are speaking a different language.

The CHAIRMAN: What system does the standard SOE operate on?

Mr Doyle: The standard SOE does not have anything to do with the physical device because schools can choose whichever device they like. They can choose Apple; they can choose PC; they can choose, as we would have seen lately, a big push in the tablet devices. There are iPads. Those sorts of things are being used in our environment. We are building this world that is quite independent of those devices. Those basic operating systems like Windows, Apple —

The CHAIRMAN: Can they all work with the SOE?

Mr Doyle: They all work with the SOE because it is designed to make sure it does that.

The CHAIRMAN: We were told the SOE was taking a long while to roll out, so does the SOE affect the pathways going to and from?

Mr Doyle: No; it makes it easier. The schools and the systems have been operating now for some considerable time. As we start ramping up the need for more communications between schools, for example, there are a number of trials in video conferencing and those types of things, and when that becomes more widespread you are certainly looking at a significant need for standards on the network.

The CHAIRMAN: Is there something you have done on this SOE in terms of a booklet that we can read?

Mr Doyle: We have quite a thick document on the SOE. I am not sure whether you would understand what it means.

Mr P.B. WATSON: I do not think you would.

The CHAIRMAN: Maybe if we could have a copy by supplementary information, it might be something that some of us might like to look through a bit further.

Mr P.B. WATSON: We will get our IT guys to look at it, or our grandkids!

Mr Doyle: I will provide the SOE documentation?

The CHAIRMAN: You mentioned iPads and tablets. One of the things that came out again on our trip up north was that people said to us that in regional areas children are using tablets. But in regional areas how do they get the information onto the tablets and how do they secure those tablets?

Mr Doyle: It is the same way, it is just a matter of the level of speed at which it would get to those devices. Once you first connect an iPad, for example, into your system, it loads up on a PC what we call iTunes. That is the big library at the back that Apple has prepared for this world of tablets. They then have all these applications in that library in iTunes as well as music, video and TV programs. But in terms of schooling things, there are a lot of applications they might want to load onto them.

The CHAIRMAN: Are iTunes computed into the tablet?

Mr Doyle: Correct.

The CHAIRMAN: If there are 300 students in the school, I do not believe they have wi-fi in these regional areas, so it would be very time consuming.

Mr P. ABETZ: It would not work otherwise

Mr Doyle: They do work on wi-fi.

The CHAIRMAN: Can you download to a tablet from wi-fi? But they do not have wi-fi in schools.

Mr P. ABETZ: They do; otherwise it would not work.

Mr Doyle: They have wireless network in schools. That is the main thrust now of our standard operating environment.

Mr P. ABETZ: The question raised with us in the Kimberley was: if there is a class with, say, 30 kids who all have tablets and the teacher wants to use an application, who takes the time to load that application on every one of those tablets? For the teacher to do that is a massive impost on the teacher's time. One of the issues raised with us was that there are some really good apps out there, but who takes responsibility? We cannot dump that on the teacher. There ought to be some IT people to do that for the teacher so the teacher can focus on teaching rather than doing that kind of tedious work. What provision is being made to make that move forward?

The CHAIRMAN: And what security is there in relation to that?

Mr Doyle: Firstly, the loading of the applications is an issue that when a school chooses a particular device, it should consider all the usage aspects of that device: What does it do? What does it not do? How does it operate? What will it mean to the way we operate in schools? Apple iPads in particular are very much an individual's device. They are not aimed at an enterprise; they are not aimed at a shareable environment; they are to be operated by an individual. That is their main purpose. The late Steve Jobs from Apple had only two or three pet hates; one of them was chief information officers, because we try to standardise things across our networks. We try to make these things shareable. Apple is not into that game. They are very much standalone—single user devices, so when you opt for that device you need to understand that. When schools come to us and ask us for opinions, I do not tell them which device to choose but if they are considering iPads, for example, we remind them they are not a computer, first of all, and they are not a shareable device.

The CHAIRMAN: Are any of the other tablets better designed to be shareable devices or are they all individual?

Mr Doyle: We are still getting to grips with exactly what the Android tablets do, which is the alternative operating system that has come out now. That is a similar premise. There is an Android market to connect to. It is the same sort of operating environment. Then you get back to the basic notebook or netbook, which is a device that operates just like a computer and is a computer, in fact.

Mr P. ABETZ: From a learning perspective and ease of use, is it easier for schools if the kids have laptops that connect to a server so that somehow they can access stuff there rather than the teacher having to load everything onto every individual computer?

Mr Doyle: The question is really: how does that suit the school? The school makes that choice. I think the iPad tablet is terrific. It is mobile, light and attractive; they engage. They are the more modern learning environments, but the PC has its strength as well. We think the desktop would be a dying device. I do not think the desktop will last much longer. The notebook version of PCs will be the option, I think, in terms of PC devices. It is about mobility, broadening educational programs et cetera. It remains the school's choice as to what they do and all we ask is that they really consider those options. We have a document that talks to schools about one-to-one computing. It gives 21 steps to get to an end. The nineteenth step is "buy the device".

The CHAIRMAN: Yes; we would love a copy of that by way of supplementary information, so we can learn as well. We have got this and none of us is a computer expert.

Mr Doyle: We do this 21-steps type documentation to impress upon schools that a lot of planning goes in, and to try not to be impetuous with their decisions about the device. "You plan it, work with your community; you work with your kids; you work with all these sorts of things and get the environment and the culture right, and make sure this stuff will work effectively."

Mr P.B. WATSON: Lindsay, I have a three-part question: how much money has the department budgeted for e-learning in maybe the next five to 10 years; is the ICT equipment funded centrally, or does each school have a separate budget they submit as they wish; and if there is a budget, what does the budget cover? We understand, for instance, that schools currently have to fund their own ICT office position from their budgets or trade in part of their teacher allocation to provide for ICT officers.

Mr Hale: I cannot answer the overall budget question. Maybe if Bevan starts with that, we will work through, if you are happy with that.

Mr Doyle: Yes. Each school does get, as I mentioned earlier, an ICT grant. That is a total of around \$18 million that goes to schools based on the number of students and locations and any other attributes of the school. That is there to do a number of things. Schools are required to maintain a minimum computer-to-student ratio. In high schools it is one for every five kids. In primary schools, it is one computer for every 10 children. Most, if not all, of our schools exceed those ratios anyway, but that is the minimum required to maintain.

Mr P.B. WATSON: Does that put more pressure on you if they have more than you would like them to?

Mr Doyle: Not really. Once you are talking 150 000 and you get another 10, it is not a lot. The first purpose of the grant is to maintain and operate that fleet of devices and then there is money left over. Residual money can be used for any ICT-related activity.

Dr G.G. JACOBS: Do they apply for that?

Mr Doyle: No; it is a formulated grant that comes every year.

Dr G.G. JACOBS: It is automatic, is it?

Mr Doyle: It is built into the overall school resourcing grant but it is segmented off as the ICT component of that grant.

Dr G.G. JACOBS: Is it premised on those ratios—one in five; one in 10?

Mr Doyle: No; it is premised on the number of students, location and one or two attributes of the students. I cannot remember exactly what they are.

The CHAIRMAN: We have asked for a copy of that.

Mr Doyle: We will be sending a formula back to Pam as supplementary information.

Mr P.B. WATSON: What is happening on a daily basis more or less with computing? Does that funding come under CPI or anything like that? How long has it been going?

Mr Doyle: It is adjusted. I will get that. I am not sure exactly how long, but it goes up according to some ratio.

[11.00 am]

Mr Hale: I guess there is a broader question that, in a way, is harder to answer because of our ongoing move to try to create maximum flexibility in schools. We come very much from the premise that the teacher makes the biggest difference for the student; it is the school leadership and management that makes the biggest difference for the teacher. That is not something that is best bureaucratised. On the other hand, we have to balance that with the standards we want across the system and also the resourcing and support and cost efficiencies and the strength that you gain from maintaining the system. So that is, I guess, the delicate balancing act that the department has been progressively going through more and more over the years as we have moved more and more to trying to enable a greater local level of autonomy and innovation. So although the sorts of grants that Bevan is talking about are systemised in the way they are allocated to schools, that still leaves schools with the maximum flexibility possible as to how they use those resources. So if we walked into a random collection of similarly sized schools serving similar age groups, we would expect to see some quite different patterns of expenditure and models; and really, the challenge then is for schools to make effective judgments for themselves about whether, having made their decisions about where they want to go, they are getting the best return that they can get.

Mr P.B. WATSON: Thank you for that.

The CHAIRMAN: It has been put to me that for a lot of schools—I have to get my language right—their platform is Windows, and they may have been given Windows for the school because they know that the students will then buy Windows to use at home as their package. But it could be far more cost effective for schools if rather than using Windows they used other platforms so that they could access open-source software and packages. Could you explain that to me?

Mr Doyle: There are two primary operating systems for computing that sits in your hands—the desktop—and that is the Apple operating system, and Windows, which is Microsoft. They are the two major computer operating systems in the world. Then there are a number of other what they call open source. So the first two big ones are big, proprietary owned and cost a lot of money to spread across our system. The open source is an alternative code produced by the IT industry and techno people who do not like Microsoft and do not like Apple and they are looking for cheaper alternatives that they can develop. So you have a range of operating systems that would be called open source. The major one of those will be Linux as an operating system for computers. We do use Linux in our system, but it is not on the computer. It is actually more a back-end data centre environment, where we have Linux operating systems running large enterprise-class servers as they are called. So it is just an alternative platform. Again, too much variety makes it very difficult for communication. So it is about accepting that the standard in the world is around Microsoft and Apple. They are going to be the major players at this point in time. They will be the majority of systems that our students will face when they go into the workforce. They will be the vast majority of systems in offices and factories. Anything else would be built on those environments. So it makes a lot of good sense for SOE and it makes a lot of good sense for future planning that we stick to the accepted major operating systems.

The CHAIRMAN: So your customer service centres would focus on Apple and Windows rather than on Linux and other programs?

Mr Doyle: We have a range of software that we do support, and that comes in three layers, if you like—two layers that we support, and one that we do not. What we call our tier 1 applications are spread right across the system. Everyone is using them. They are quite straightforward office productivity things like Word and Excel and those types of things.

The CHAIRMAN: So they are Windows packages?

Mr Doyle: They are Windows, or Apple; it depends on what device they are using. They are a tier 1 application. Tier 2 applications are if a school wants to use them, and they are generally fairly widespread around schools, we will help schools with that particular range of applications.

The CHAIRMAN: What would come under the tier 2?

Mr Doyle: Tier 2 would be an Adobe–Acrobat type of application that everyone uses to read documents.

The CHAIRMAN: So those extra programs, such as MYOB for the students studying economics?

Mr Doyle: If the school is running MYOB it would not be in tier 2. It would be in tier 3; in other words, it would not be supported. Schools can choose to load up any number of applications. There are thousands of applications being used by schools, depending on their local communities and clients and those sorts of things. But we cannot support that. It is just impossible. So we try to create an environment in which these things will work. But the tier 3 issues are definitely a school's problem.

The CHAIRMAN: Do you give the schools a list telling them, or can they go onto your Internet site and can they then know from your Internet site that these things are supported and these things are not?

Mr Doyle: Yes. We have classifications available for schools.

The CHAIRMAN: Can we go onto your Internet site to see that or can we ask for that by way of supplementary?

Mr Doyle: I will provide that by way of supplementary.

The CHAIRMAN: Thank you.

Dr G.G. JACOBS: Deborah, I would like to ask a question. Can you tell me a bit about e-schooling and e-learning in Western Australia, and what is the most significant long-term benefit of e-learning?

Ms Bevan: I will just qualify, because we have used the term e-learning, and Bevan responded on that, saying that that is referring to infrastructure, and it can be. I am taking your reference to e-learning to mean —

Dr G.G. JACOBS: The classroom stuff.

The CHAIRMAN: Are you talking about the whiteboards, Graham?

Dr G.G. JACOBS: I am talking about e-schooling generally. Can you tell us a bit about e-schooling and what it means in the classroom and the benefits of it?

Ms Bevan: It has been a part of the language of schooling for 20 years, and it started as a concept in classrooms where frequently you might see five computers, if you were lucky, or one computer at the back of the room, and the rest of the classroom was predominantly a face to face, paper and pencil type of environment. Computers frequently became a part of when you had finished your work; you could have extra time on the computer.

Dr G.G. JACOBS: Like a reward, if you were good!

Ms Bevan: Yes. It largely was because of the access. Over the last 20 years, though, we have made massive inroads into the access side of it. So now most schools would have computers as a regular and normal part of everyday learning, not the entire process of schooling.

Dr G.G. JACOBS: So an adjunct to their lessons?

Ms Bevan: Absolutely—an adjunct, an augmentation of the lesson; so improving and adding value to a lesson. It still does not, though, replace the quality of schooling, which is about face to face, human interaction between a teacher and a group of students; and that still largely is the case today. So most schools in our system do have physical locations with physical groups of teachers and students conducting teaching. That may involve now a lot of computer-based tools, and those tools could be interactive whiteboards, where a teacher now is equipped with their own laptop, and they are putting a website or a digital piece of learning content up on the screen, and students are interacting and discussing, and perhaps submitting information to it if it is very interactive. Those sorts of lesson are going on in schools.

The CHAIRMAN: Can I just ask, before you follow on from that, is there any evidence about the effectiveness of that? I have seen those whiteboards in my schools and they look fantastic. Is there evidence that they actually improve learning outcomes for students? They are very costly. We were told at one school that one broke down, and it took five weeks for someone to come out and fix it. Is there the evidence for them? Are they the wonderful thing that teachers are saying they are, so that if a school does not have one for five weeks because it has broken down and it takes five weeks to get it repaired, are those children disadvantaged?

Ms Bevan: When it comes to research on the impact of any particular piece of schooling, such as a particular interactive whiteboard, it is not an exact science. It obviously must depend on what questions, what content and what processes are used with that tool. You could see beautiful practice where you have deep engagement and really high-level thinking going on between the students and interactions with the teachers as a result of what is being done on that whiteboard.

The CHAIRMAN: But it is not evidence-based learning? It is basically that they look good, and they work well in some situations?

Mr Doyle: The fundamental issue still in terms of what the evidence does tell us about student learning is that the most important factor is effective teaching. So a high quality teaching capacity is what will make the difference. So then this becomes very complicated, because a very able teacher who brings any tools, but including these tools, to bear, will have a much stronger effect on student learning. With a less able teacher who might not even understand how best to use that equipment and who might not be using the best pedagogy in any case, it will have a limited effect. But whether we would say that is a technological issue is another thing. I would certainly argue that it is more an issue about pedagogy. What we are trying to do with these tools is equip our teachers with the best contemporary tools. But it is not a replacement for quality teaching. It is premised on the basis that you want the most able teacher that you can find first and foremost, and then equip them with the most contemporary and effective tools.

The CHAIRMAN: So does that mean that a teacher who uses them well, and then loses that instrument of teaching and learning for five weeks, will be disadvantaged? What we are wondering is should there be loan projectors that can be sent to schools? Should we be saying to the government, through our recommendations, that these things appear to be very useful learning tools, and we know that in some areas when they break down there is a long wait for them to be repaired, so we believe your department should have a dozen of these things in the cupboard so that they can be sent to wherever the school may be so that the classroom is not without that equipment for the five weeks that it might take to get it repaired?

Mr Hale: Bevan may have a more technical response to that than mine, but I think it is probably more important to go back to some of the earlier discussion that we started with about the technical

support that is available to schools. Bevan is the technical expert, but my suspicion would be that if that support was more readily available, that would be a better way of addressing the issue rather than trying to have some sort of central backup of bits and pieces. For a start, I do not think we could ever keep up with demand. This is expanding rapidly all the time, and of course as it expands there will be greater capacity to schools in any case. Bevan probably needs to talk to you more specifically about the effectiveness of that concept.

Mr Doyle: Where you are running a technical environment or using technology, we would all experience some sort of problem with the technology. It is the nature of the beast—it is probably one of the few things you would buy knowing that it is going to break at some stage. I have never met anyone who has never had a problem with technology. One of the key aspects in using technology is to be aware that that is the reality of the world, and should it break and should there be a delay, there should be some business continuity plan in place. There should be a fall-back position if you have a major disaster. It can happen. A network can be entirely taken out. A front-end loader can dig up a fibre, and the next thing you know the whole school is shut down. So what we urge the schools to do is have a plan so that when the system goes down—not if, but when—they can continue a valid lesson in the classroom. You must remember that it is only one aspect of the teaching and learning program. It is a tool; it is technology. A quality teacher would get over that hump. It is not the technology that makes the difference; the technology is the box of wires and lights and that sort of thing. It is how that stuff is used effectively by a teacher.

[11.15 am]

Dr G.G. JACOBS: Deborah, I wish to talk about the whole concept of e-schooling from when I went to school. There must be super advantages in technology. Even in everyday life, my kids, who are now grown up, can access stuff that I would have to go to a library for and thumb through three volumes of something to find out what this is and get a bit of background, and now you can get it with a flick of a finger or a push of a button. Without putting words in your mouth, with all those other things being attended to with good teachers and things, are we likely to see huge advantages in e-schooling because of the whole access of information and background and research and stuff that we can put our hands on as students?

Ms Bevan: Most definitely. The information age is here and it is being adopted in schools as it is adopted in every aspect of our lives. Schooling largely has no option but to acknowledge and take advantage of and therefore transform some of the practice that is going on in schools. As you rightly say, the ability to find information and locate it is a completely different order from the days that we were at school. New skills are required as a result. New forms of literacy, which we refer to as multimodal literacy, are new skills for the twenty-first century. The education world has tried to define twenty-first century learning skills. They are new and they refer to the ability to be critical analysts of text, images and sound and the combination of these into information products that are websites, pinged you information to convince or persuade you to buy something related to the text you are reading in the centre, followed by an embedded video of YouTube to convince you to do something else. This is the situation now. Information is presented: you hear it, you view it, you read it and then you can speak it and write it. These forms are interacting all the time in literacy. One of the newest and most critical skills for students now is to be critical of the information they are receiving to make judgements about its value, its bias and its truth.

Mr Hale: Could I possibly make a very brief further comment on that? The other issue for us in education is that, paradoxically, our online capacity is limiting our ability so far to take full advantage of this. Into the future, if we can provide appropriate levels of access in regional and remote parts of the state, this is a very promising way of redressing what otherwise is necessarily an inequity. If you live in a tiny community a long way away, necessarily in what you can actually touch with your hand, you have limited access to resources and information and so on. This is the big opportunity that is before us. The paradox is that in a place such as Western Australia where

that opportunity is so great, the reality is that the cost is potentially enormous because we are far flung, we have a relatively small population and people are a very long way away. The paradox is that the people into the future who could most benefit from online learning, meaning our students in remote schools but also whole school communities, do not have the same quality of access that their peers in the metropolitan area have. The core challenge in delivering the sorts of things Deb is talking about comes down to technology issues.

Dr G.G. JACOBS: I wish to follow up on that issue. When we went north we were pretty much astounded by the poor rates of literacy in some schools. With all the things we have talked about relating to e-schooling, it is still very important that kids learn to read and write and do all those things. There are huge illiteracy rates in some schools. Can we use e-schooling to help that? We can talk about all these great things that it can do but kids also need to be able to read and write.

Ms Bevan: Absolutely. Increasingly, we are seeing some emerging, really exciting ways in which engagement in text and forms of reading and writing can be enhanced by technology. iPads as tablet devices are very motivating, interactive, instant feedback providers to students on their progress, a lovely adjunct for a teacher to improve reading and writing literacy. The internet has a massive range of resources and can help students perhaps with special education needs; that is, ones who pick out and diagnose certain areas of literacy problems. We can use technology to help in the diagnosis and then in the remediation of that. We also produce a bank of over 27 000 pieces of content within the department's content repository to help teachers select education quality content and display it to the students. Digital content is engaging. Gaming type technologies are sometimes employed by teachers. Some teachers actually engage students to write the games and in doing so build up some very competent literacy skills through that. Technology is increasingly a part of the way students are being exposed to learning activities and completing learning and the way teachers are preparing those activities.

The CHAIRMAN: Can we come back to the SOE4 and SOE5? We have been told that the SOE4 has not been rolled out across the state. Is it 50 per cent or 75 per cent rolled out?

Mr Doyle: It is being rolled out to all our high schools at the moment under the funding available to us from the national secondary schools computer fund.

The CHAIRMAN: Is that metropolitan and regional?

Mr Doyle: Yes, it covers all high schools. The program that was funding computers from the federal government for years 9 to 12 provided us with on-cost funding as well as the purchase and device cost. We are using some of that to roll out the standard operating environment in our high schools—all schools with years 9 to 12 in them.

The CHAIRMAN: Because it has not been fully rolled out yet, and again because we have just come back from the Pilbara and Kimberley, if a school does not have the SOE4, we have been told they cannot link in to your CSE to be given support for programs and hardware possibly so therefore it is costing more for those schools that are not connected through the SOE4 but they may have to get private contractors in to fix it up. In those remote and regional areas that will be two or three times the cost of a school in the metropolitan area that has software or hardware problems. Is there any priority for rollout of the SOE4 and when it is likely to be fully rolled out to the remote and regional areas?

Mr Doyle: That is all subject to available funding. If schools choose and have the necessary money, they can pay an amount to have the SOE installed in their school. But we do not have funding at the moment to do all schools.

The CHAIRMAN: Can we have from you by way of supplementary information details of which schools have the SOE4 and which schools do not have it?

Mr Doyle: Certainly.

The CHAIRMAN: If the funding is not currently available and if it does mean that this is a very high additional cost, maybe for some schools in regional areas, maybe a certain package of money needs to be made available to bring those schools in those areas up to date a bit quicker.

Dr G.G. JACOBS: How much money do we have and how much do we need?

Mr Doyle: So far we have spent \$14 million on the SOE rollout. The total on-cost funding we received from the national secondary schools computer fund was \$47 million. That is to cover four years. We are using that for wireless networks and for that part of the SOE in those high schools.

The CHAIRMAN: We have been told that the customer service centre does not support library services.

Mr Doyle: Correct.

The CHAIRMAN: Is there a reason?

Mr Doyle: A great variety of library systems are used in schools.

The CHAIRMAN: That is where you are talking about those tiers. When we get that list, that will probably come down as a number 3 in your tier system.

Mr Doyle: Correct.

The CHAIRMAN: I think Deborah said that the education of teachers fell under her hat. We have been told that there are teachers who lack competence in ICT. What is happening with teachers who might have graduated 30 years ago? This technology must be very difficult. I have an iPad and I am still learning how to use it. My grandchildren sometimes say to me, "Grandma, if you push this button and this one, you take a photo." I am learning from my grandchildren how these things work. What support is being given to those staff for professional development for e-learning and all the new technology?

Mr Doyle: I can make a quick start on that.

Mr Hale: We can probably each contribute a bit.

Mr Doyle: Schools get a school grant and part of that is a professional development grant so they use some priorities and those sorts of things to assess what programs they are going to do and that certainly falls within the ambit of Lindsay and Deb's area. Another program we try to offer them is the notebook for teachers program, a program under which teachers can lease and get access to a quality notebook computer. It is a method of trying to assist them to have access so they can take it home and play with it and learn from it. This is a modern technological world and the difficulty is that teachers who are just not engaging with the technology stuff are going to have to acclimatise to the tools and technologies for young children these days. It is part of their engagement; it is part of their world really. This is the first group of kids from go to whoa in our schools who were born in the digital era. This is where we have to accommodate them and it is quite a challenge professionally.

Mr Hale: I might add a bit and invite Deb to say a little more. We need to acknowledge that there are now generations of people joining the school workforce who are very highly IT literate. It is important that we respond to that. There are some issues there for us for a start. If they come into our world and suddenly feel that they have been dragged back, that is a real issue. Where we have inexperienced younger graduate teachers going out to the regional and remote areas, it is very important that we keep them connected to the world that they are part of. That is an important part of our development and retention of our future workforce. My caution would be that it is easy to generalise, and I guess we all do that because of our own personal experience and frustration of perhaps seeing a 12-year-old son or grandson being able to do something that we cannot even comprehend. Having said that, many of our older and more experienced teachers in schools —

[11.30 am]

The CHAIRMAN: My grandchildren, who are 4 and 6, are teaching me, so it is children who are even younger than 12.

Mr Hale: Yes. Nonetheless, we have older and more experienced people in our schools who are right at the vanguard of this technology. I am always cautious of that when we generalise. Although I am certainly nowhere near that higher level, I have been into and worked at schools where often the leaders are some of the most experienced teachers, usually for the reasons Deb was describing. They are the people with a high capacity in teaching quality who can then apply that technology in the best way. That is what enthuses them. The young person connects because of the technology and the more experienced person connects because of the potential to improve their capacity to teach.

From my perspective of our professional learning, this is a concern for us in the future. To have more equitable availability of professional learning across the state will require us to have a greater technological capacity. That is proving to be a challenge, and I am sure that the degree to which it is a challenge will just increase. It is very important to us, but it also is in itself an opportunity because one of the best ways we can develop a teacher's capacity to use communications technology with the students is for us to use it with them. Progressively, we are trying to make more of our professional learning online learning because that is very effective. Again, just as with teaching, face to face contact is very important and we do not want to lose that, but we can supplement that with online learning, especially for people in the more remote areas. When teachers engage in that type of learning, they automatically pick up these skills much more quickly.

The third part, which I will ask Deb to respond to, is making the capacity to use the stuff simpler. That is also part of it. We want more people to engage. I am sure that we have all experienced the enormous frustration if you do not feel you have great technical knowledge and you are sort of working intuitively and then bump up against a wall and do not know what to do next. One of the things Deb is working on is how we can break down the walls so that people can work intuitively. Can you just comment on that, Deb?

Ms Bevan: Yes, I can expand on what we are doing. As Lindsay rightly said, one of the ways we can help teachers adopt technology is to make the technology simple and easy to use. Most of you probably have an iPad or an iPhone, or your grandchildren do or you have one of them or a computer in the household. Less and less training is required to use these newer devices because they are getting easier and simpler to use. I think we have a responsibility to improve the way we provide that technology experience to teachers and students. That is one way to reduce training and improve adoption rates of technology. Having said that, we still need to support teachers and we have a number of programs, some of which are funded by partnerships with external agencies and some of which are funded through a whole-of-department contract to provide online professional learning to 2 500 teachers a year, and we have been running those for three years. Those programs allow teachers to register for free into a world of courses that they can undertake. They can be self-paced or moderated and they can learn about the basics of using Excel or Word or how to use digital photos and manage them in a classroom situation and how to use the internet effectively and about what search strategies they can give their students. Those sorts of courses are available for teachers right now. We have online professional learning courses that help them deal with copyright issues and using digital resources effectively, and about students' online policies. These courses are freely available. At any time teachers can enrol in these classes, take them at their own pace and refer back to them. A level of self-paced support is provided.

The CHAIRMAN: Can you send us the details on what the courses are? That might be useful, particularly if it is a list, to put in our report for teachers who may not go onto the website but may possibly read our reports, because we do some good reports.

Dr G.G. JACOBS: How long do we have?

The CHAIRMAN: I think we have to finish because Parliament starts soon.

Dr G.G. JACOBS: I am being the devil's advocate because I have had visits from relevant unions from the public sector and the Civil Service Association of WA. When the Chair asks you to round up and summarise, can you touch on a few of these issues for me, although not in a deep way? The argument goes something like this: the Department of Education's planning around ICT is narrowly scoped around central office and the system as a whole rather than on individual schools. For instance, the Department of Education appears to have no structured plan around the rollout and maintenance of ICT in individual schools. Is this correct?

Mr Doyle: Schools are required to have their own —

The CHAIRMAN: Before you start, because of the time I will give you each two minutes. You have looked at our terms of reference and heard what questions we have asked you. You are aware if we have missed some big gaps and can let us know what homework we should be doing to get on top of this. As well as answering Graham's question, can you give us a summary and refer us to any areas that we should be looking at? When I give the summing up, I will say that we are more than happy to receive any further supplementary information from you that you think may assist us. I will give you just two minutes each, I am sorry, because we do not have as much time as we would like.

Mr Doyle: In terms of the planning process, at the enterprise level we concentrate on a system as a whole; we do not deal with an individual school in that type of micro detail planning. However, we are aware of the environments in those schools and every school is required to have a strategic plan, if you like, including its approach to the use of technology in the school. Again, in the interests of independent schooling and having more flexibility at the school level, it is because of the variety of choice, such as the desktop computers and those things that I mentioned earlier, that it still falls onto the school and each business area if you like to make sure that it has a plan in place about how it will use and manage those technical devices.

Mr Hale: I just wanted to raise an issue which we have not got to today but which I think underlies the submission we provided and goes to a number of the things we have talked about. I would be very concerned about, and I encourage the committee to look at, the national broadband network proposals because from our perspective in education we constantly come up against the difficulty that many people feel that the national broadband network will be the solution and that all these problems will go away. There is not time to go into detail about that now, but the national broadband network will not be the solution; it will actually provide in many ways a lesser service than the one that Ben has described. That is not because there is necessarily something wrong with the network concept but because the network is designed for homes and very small businesses rather than relatively large enterprises like the whole public education system and each of the enterprises that make it up, which are the schools themselves. I encourage the committee to consider those issues in their thoughts about the future resourcing needs of ICT.

The CHAIRMAN: It will not be the be-all and end-all.

Mr Hale: Far from it.

Mr Doyle: At the moment it is a consumer-based, consumer-class technology. It is about access to the home. That is what is driving it.

The CHAIRMAN: It is about one to one rather than big groups. I believe that when it is rolled out it will be outdated in terms of what is available with speed and costs for some other systems.

Mr Doyle: The fibre component should be good but in Western Australia the fibre component is very limited as to where it goes. If you look at the NBN website, you will see a map of the rollout. In the middle of Western Australia, in a large part, there is a yellow colour that is the satellite coverage under the NBN. That is why I think that people in Western Australia have an issue about what that actually means for businesses and big organisations such as ourselves.

The CHAIRMAN: Deborah, your final gems for us?

Ms Bevan: The impact of technology in schooling is something that we have to acknowledge and we must understand that it will require significant capital investment not only in the infrastructure that Bevan has referred to, but also in the change management and support needed to provide to teachers to effectively use new ways of doing their business. We have a number of schools in Western Australia in our public system that are adopting technology in very innovative ways, and it is our responsibility to take advice from those schools to bring back to the centre some of the ways in which we need to strategise for the whole system. I think our school-driven innovation is a very important strategy to be really talking to, observing and understanding the varying contexts that schools want to use, and do use, technology for.

The CHAIRMAN: I thank you all for the evidence you have given before the committee today. A transcript of this hearing will be forwarded to you for the correction of minor errors. Any such corrections must be made and the transcript returned within 10 days from the date of the letter attached to it. If the transcript is not returned within this period, it will be deemed to be correct. New material cannot be added via your corrections and the sense of your evidence cannot be altered. However, should you wish to provide additional information or elaborate on particular points, please include a supplementary submission for the committee's consideration when you return your corrected transcript of evidence. Once again, thank you very much for making it a bit more understandable for us.

Hearing concluded at 11.41 am
