

**EDUCATION AND HEALTH
STANDING COMMITTEE**

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

**TRANSCRIPT OF EVIDENCE
TAKEN AT PERTH
MONDAY, 9 JUNE 2012**

SESSION SIX

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 3.09 pm**AITKEN, DR ASHLEY MORGAN****Senior Lecturer, School of Information Systems, Curtin University, examined:**

The CHAIR: 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. At this stage I would like to introduce myself, Janet Woollard, Peter Abetz, and our secretariat, Brian Gordon and Loraine Abernethie. We also have from Hansard with us today Liam Coffey. The Education and Health Standing Committee is a committee of the Legislative Assembly. This hearing is a formal procedure of Parliament and therefore commands the same respect given to proceedings in the house. This is a public hearing and Hansard is 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 we have for you today, I need to ask: have you completed the “Details of Witness” form?

Dr Aitken: Yes, I have.

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

Dr Aitken: Yes, I do.

The CHAIR: Did you receive and read the information for witnesses briefing sheet provided with the “Details of Witness” form?

Dr Aitken: Yes, I did.

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

Dr Aitken: No, I do not.

The CHAIR: In that case, would you please state your full name and the capacity in which you appear before the committee today?

Dr Aitken: My name is Ashley Morgan Aitken, and I believe I appear as a senior lecturer from the School of Information Systems at Curtin University; as an academic who uses technology in his teaching; and also as a parent of primary school children.

The CHAIR: Thank you. We have sent you some questions, but maybe before we look at those, because you have had a chance to think about the area and you know what we want to do with this inquiry, we might give you the floor for a while to tell us what is happening in the area, the strengths in the area, the weaknesses in the area, and what can be done to see improvements. And then, if we do not feel that you have answered those questions, we will come in!

Dr Aitken: I have tried to make some notes for the particular questions also, so I guess I will make some introductory remarks.

First of all, thank you for the opportunity of meeting with the committee. I am generally very encouraged to see the state government actively considering these issues; they are very important things, of course, and I hope I may be of some little assistance. I should say, by way of a disclaimer, my research at the university is into teaching and learning, but mostly at a higher educational level. I do have some exposure, as I mentioned, to primary schools; I am the chair of our school council and I am involved in ICT at the school. My son is now moving into high school, so I am interested

in that area, but not as knowledgeable as I should possibly be in all areas of the school from K to 12. I also have no expertise in the area of foetal alcohol syndrome; those questions I will not be able to help with. I also tend to be a medium to long-term thinker, rather than short term; I know that the committee is looking at the next five years, it seems, but I tend to look more forward. I think what possibly alerted Brian's interest was a presentation I gave at Curtin on technological singularity. I am not sure if you are aware of that, but its predictions for the future are based on the modelling of ICT over the last 20 to 50 years. It is not some crazy sci-fi stuff; it has been popularised by a scientist named Ray Kurzweil and others. They predict that by 2020 a single computer will have the processing power of a human and that by 2030 computers will have intelligence, as humans do, and we do not just mean IQ; we mean all forms of intelligence. By 2030, they will have emotional intelligence, creativity and all those things. Things start to go crazy once computers are as smart as humans, of course, because they can work 24/7 and improve themselves, and things start to take off exponentially, and that is the key word here.

Mr P. ABETZ: As long as they do not start breeding!

Dr Aitken: They can start to manufacture themselves; it sounds like science fiction, but these predictions suggest that this is happening and that we are now near the exponential curve that is about to take off. By 2045, they suggest that a single \$1 000 computer will be a billion times more powerful than a human. So I guess, by this, I am trying to suggest that disruption is happening and is going to happen on a grand scale, possibly, in the future. In the next five years—nothing like this, of course—but we are seeing disruption from ICT, from the internet and from the World Wide Web, of course, and these are the areas I will focus on more, I guess, in my presentation. In terms of context, I think we know that climate change is a big issue as well, but something like technological singularity is a pretty big issue to, I think, that maybe government and people should be discussing more, and we probably will as we go along.

[3.15 pm]

In terms of the focus on education, we know that the web is the big thing these days, and access to infinite or almost an infinite amount of knowledge and resources and guidance for skills. This is very much a two-edged sword; the World Wide Web is a big distraction for me and for everybody, because there is access to resources that are useful and resources that cause time wasting and procrastination. We also have issues with information overflow, and we have to maybe focus on skills for people to handle large amounts of information. So it is more about being a consumer and analysing the quality of the information and its sources—whether it is objective or not—and teaching students how to be users of this resource, this powerful genie, this oracle, this big resource.

One of the issues was focusing on years 11 and 12; I also have an interest in that. One of the things I will talk about later is outcomes-based education; I am not up to date, unfortunately, on the current political status of that hot potato. I know it has been argued about and discussed, but I see a lot of this as being outcomes-focused in the future, and I will talk about that.

One thing I will say about years 11 and 12—you said, it is facilitating great opportunities to engage students there—is that we are trying to broaden our focus for years 11 and 12. The focus on getting students to university has long been a primary one, but we have also expanded that greatly in vocational skills and so on. But I think we have to go even further in years 11 and 12 to really think about what is the purpose, why we are here and how are we going to help students in their life after secondary school. I read a book recently by James Altucher on why students should not go to university. It is in the US context, and my wife screams at me whenever I talk about it because she wants our boys to go to university. In the US context, of course, where the debt for a university degree is so large, Altucher says there are many, many reasons for people not to go to university and to at least take a couple of years off or try and get some other route into education or into their career. I think that high school needs to cater for these other routes for doing things, preparing people not just for university or vocational skills, but starting businesses, social enterprises and all

these sorts of things. It is about preparing them for life, the broad gamut of life, rather than just universities or vocational things. So it is focusing on things like Just-In-Time Learning, information literacy and IT literacy. All that sort of stuff is very important at those years.

You talk also about adult learning in regional and remote WA. Of course, the internet is a great thing here, but with remote WA it is more difficult. I always joke to my friends that Perth is the most remote city, but I say that we have the internet and we are still connected to the rest of the world. But we know that people in regional WA sometimes do not have the full internet or as fast as they wish, so they are even worse off than Perth perhaps being so remote. It is crucial that the NBN get to the regional people and outback places. Perhaps more than even a suburban focus, I would have preferred a focus on the regional places and also a focus on schools, hospitals and educational centres rather than every house. I think most people probably have adequate access to internet that they need at the present time, but the NBN is doing everything, so that is good too. Also, with regard to regional and remote WA, I would like to see people encouraged more to offer their knowledge and skills to assist people learning in the outback and regional WA. For example, retired GPs may be able to assist biology students who are studying online or something like this; so using all the knowledge and resources we have rather than just having formal structures like institutions. Online learning is good, but it is nice to have some interaction as well. I guess that is a full introduction, if that is what you are expecting—if that is okay.

The CHAIR: Yes, but on your comment though about the NBN rollout, because a lot of people I know who are into computing say that by the time the NBN gets rolled out there will be so many other systems that are so much faster that they question whether all that money should be spent.

Dr Aitken: My question is not really on that issue. We will always need a fast-wired network or optical network as it is. We need that, but my point is more about priorities and where we should spend the money first. I think we will get faster wi-fi of course, but it is nice to have an optical fibre coming into the house as the main feed, and the wireless and other technologies as being secondary. I believe the optical networks can be upgraded and improved, so they will be there for the long term. The wireless stuff does change.

Mr P. ABETZ: How do you see the digital revolution, for want of a better word, enhancing education from primary school right through to adult education? Where do you see it making its biggest contribution?

Dr Aitken: We have to think about what is the goal of education and learning too. In the past it has been this set route of subjects you would learn to get to university, and in university it is set degrees. Now are we educating for roles in society or are we educating for personal development and particular careers? We have to think about those things. I think digital technology, which is a broad term of course, gets back to the learning outcomes basically. One of the key things that digital technology can help with is tracking people's knowledge and skills—so their level of learning, the learning outcomes they have achieved, basically—so that every student can move at their own rate. One of the things that systems do now is they model the students' knowledge, but often it is modelled in different areas. So web-based systems like Mathletics and Spelling Bee, which I assume you are familiar with, keep track of where students are at in mathematics learning and so on. This is outcomes based: you do not get to proceed until you have achieved certain levels in Mathletics skills and abilities. I think digital technology will allow us to create a real model of the knowledge and skills that each learner has. That is a really key thing, so that we know where they are up to. Teachers' roles will now be more, sort of, guide-on-the-side and manager of the learning rather than the primary provider. I see these web-based systems as the future. I see how my children engage with Mathletics and other similar systems. It is like the gamification of education. Gamification is a big thing in industry these days—making all services like games where you are challenged and you achieve skill levels.

The CHAIR: What do you mean by web-based systems?

Dr Aitken: Web-based systems are provided through a web browser so you use a system that is provided by a central service somewhere.

The CHAIR: Like Wikipedia?

Dr Aitken: Like Wikipedia, but more an active thing. Like you do your email in a web browser; you run the program in a web browser now. It is no longer installing software onto your PC; you are using software over the internet.

The CHAIR: In which case, can I ask you about iCloud? We have been told as a committee that a primary school would get funding for its IT based on the number of students at the school. If they have 200 students they might get \$16 500 a year and they are expected to upgrade their server and computers every three to four years. Servers are big things and take up a lot of time. What do you think about an iCloud or similar—from America or wherever they are—a skyline-type service?

Dr Aitken: I think you are looking at cloud-based services, so rather than installing software on your PC, you use something over the internet. A couple of years ago our school had a very big discount on software to install on your PC, so I bought packages for my children, but the next year they moved to the cloud, which is why they were discounting them. It is no longer installed when it was provided through the cloud. The funding issue is interesting, and with different cloud-based services—there is iCloud, as you mentioned, which is Apple's offering, Microsoft Office Live and cloud-based SkyDrive and so forth, and Google now has a cloud service called Google Drive. The nice thing about these is you should not need that much infrastructure in your school. Basically, all you need is a web browser and a good internet connection. The whole expense, of course, with IT is maintaining it and upgrading it all the time. You can reduce those costs by focusing on just the client—your web browser and your local PC—and maybe not needing such an expensive server because the server is in the cloud, as they say. I am not sure on the details of the funding there, but a lot of these cloud offerings are free so they provide a free basic level of service—Google does. Apple's iCloud provides the free cloud, but it is tied to using their devices, which are expensive, and applications which come with the devices, which you pay for as well. The only really free one is pretty much Google's, and Microsoft has a similar one in which you get the free software in the cloud but you have to buy the devices and the operating system. With the budgetary things, I think you should be able to cut down a lot on school infrastructure needs, but the school probably still needs somewhere to store local files and to do local stuff. So you get a smaller local need and a larger dependency on the cloud services. The cloud services I mentioned, like Mathletics and Spelling Bee, are not free, so you have to pay for those services on a per student basis. I am unaware of the details of how expensive they are, but it is a big decision to go with one of the service providers for your education, for maths or spelling. There are lots of issues there. Does that help a little bit?

The CHAIR: Are you aware of any schools—not remote WA because we cannot do a big trip around WA again—in the metropolitan area that are using iCloud or one of the other servers up there? It interests us as a committee to see how it is being used and to discuss with people the advantages and the disadvantages.

Dr Aitken: As I mentioned in my introduction, I am really not across all of the K–12, primary and secondary schools in Western Australia. I really only have interaction with them through my experience with my children and a few other schools. I have done some work with professional development for high school teachers to make them aware of the ICT offerings we have at university. With regard to using the cloud there are two aspects, as I mentioned. One is where you use a service like Mathletics, so the students use this program in their web browser to learn maths and it keeps track of their level in maths. It is a game you play against math students all around the world; you have competitions. That I think is being used more commonly. But then you have the cloud-based productivity tools, so currently students might use Microsoft Office on their PC or a free version using Linux software with Open Office. What this cloud now offers is word processing

inside your web browser. So, rather than going to a Wikipedia page, you go to a word processor page and now you can do your word processing inside your web browser; you can use spreadsheets and presentations. So all you need is a web browser; you do not need to install Microsoft Office or Open Office. Now when you save your document, it is not saved to your local PC, it is saved into the cloud somewhere. The nice thing about that is you do not have to take your little thumb drive and put your files on it and take them around—and lose your thumb drive, usually; it is always there. So when you go home, you can log on again to that web browser page and there is your document.

The CHAIR: I am still trying to visualise this, but with the cloud where you store your information, when you register to have that server and you want to be able to use word processing, PowerPoint and Excel, do you then pay for them to go on the cloud, or how does it work?

Dr Aitken: Basically, Excel and PowerPoint are Microsoft desktop applications, but they now have versions that they provide in the cloud as well. I think it comes for free or you have to own a copy of Microsoft Office—I am not clear on the details of that. But Google, for example, provides an equivalent service for free. You sign up for Google Drive as it is called now and you get access to a word processor, which is sort of compatible with Microsoft Word, a presentation program compatible with PowerPoint and a spreadsheet program, so now you can use that for free.

[3.30 pm]

It does not cost anything. You get five gigabytes of storage free. You get basically everything for free, so there is no longer need to pay for the basic tools. Services, as I mentioned, like Mathletics, which is a cloud-based service you pay on a per user basis. At Curtin all our students have the Microsoft cloud provided for them for their email, word processing and spreadsheet presentations. They all have access to all these tools wherever they have a web browser—they have their own personal machine at home; they have a university machine; in a cafe with internet access. They can access all their files and do their work. I use, as I say, Google Docs in my teaching. In the old days, of course, when you finished an assignment you would print it out and submit it to your tutor or you would send them a PDF document. Now we just share the Google document with their tutor. There is no need to move it around. You give access to your document to your tutor and your tutor can look at it and mark it. It is changing the way information flows around and the way we do learning and documents.

The CHAIR: If Apple has iCloud, why with iCloud is Apple still selling 15-inch notebook computers for \$4 500?

Dr Aitken: Apple distinguishes between what they call the average user. In the past the average user had been made to use a desktop PC or a complex laptop. Now they say most users would get by with an iPad. Primarily, users are doing consumption—writing some short emails. They say that the desktop PCs and the laptops are sort of like the trucks of today. When cars first came out there were a few and then trucks came out. They were the big heavy movers and we all had little cars—Henry Ford's cars—to drive around in. They say that the iPads are like the cars and the PC is the truck where you do the heavy moving and the heavy work. If you want to write a book or produce multimedia, you need a PC or a powerful laptop. If you are primarily consuming information and a little bit of production of information, the tablet is great. For myself, who does both of those, you probably need both things, whereby you have a laptop and a tablet to do the consuming. The thing about Apple's cloud is that it is really a proprietary thing; you have to have their devices. They give the cloud for free if you have their devices. Similar to Microsoft; they are pushing the operating system. Google is the one that gives us all the way pretty much for free because they want everyone to use the internet and they get the advertising.

The CHAIR: What about doing the big number crunching? When will the schools start using something like Amazon? Where does that fit in?

Dr Aitken: That is a good question. I had not thought about that one. Amazon also provides Amazon Web Services, which I think you are referring to. Amazon has hundreds of thousands of computers, the same with Google, and they use them for selling their books and stuff. Most of the year, besides Christmas, they are not utilising all the hardware. They decide, “Let’s make all these computers available to others to rent, basically, and use for their computing.” Now we see, not individuals so much, but organisations. Rather than having and maintaining their servers, they start to use Amazon servers or Google servers. They provide them at a relatively cheap rate, taking into consideration all the maintenance, the human resources, the training and the back-ups. They have Googolplexes or installations of these around the world on different continents, and it is all backed up across different continents. Whether schools would start using this, I am not sure. They are used for particular needs. I can see perhaps, for example, the provider of Mathletics may be servicing hundreds of thousands of students. Rather than having 100 servers themselves, they would basically rent 100 servers from Amazon or Google. Those sorts of providers would be using the cloud service machines directly. I do not think schools would—perhaps the education department. Basically, they are outsourcing their ICT servers and infrastructure.

The CHAIR: Last week, similar to Amazon with a big server working it, we connected via Skype to a professor of chemistry or science who then showed us how they had the machine there and the students could put in so much sodium and calcium and magnesium—it was all a bit technical for me—into a machine. They went down the list and when their number came up for what they had sent, it churned and sent back to them their results. It is being used.

Dr Aitken: It is being used for science and all sorts of things. There was a demonstration by Google last week where they had this genetics—some sort of human genome modelling or looking for relationships between genes. They do it very slowly on 10 computers, but then they went to Amazon or Google and they used 1 000 computers and then they were using 6 000 computers. It was going full speed. The nice thing is you pay only for what you use. You use 6 000 computers for a week; you pay for a week and then you pay nothing more. You have no capital that you purchased and need to maintain. Of course, we know that ICT goes out of date very quickly so they need to update this sort of stuff. I think universities and organisations will be using things like Amazon’s—it is called a platform or infrastructure as a service—but not schools particularly. I think schools will be using the services provided by third parties.

The CHAIR: Schools, both primary and high schools, are more likely to use the cloud service more than the next level, which is the —

Dr Aitken: Yes, infrastructure services provided by the cloud. My vision would be that some sort of learning service provides a model to the teacher, which continually monitors the student who is falling behind in particular areas, who is hitting barriers, and it alerts the teacher to who is further ahead than others in particular areas. The teacher has a nice model of each student and can see where they are going well and where they are failing and can spend their time addressing these exceptional situations rather than teaching the whole class as if they are all consistent, they are all on the same page—managing the learning process rather than doing the learning and teaching themselves.

The CHAIR: At what age do you see in a classroom all the children sitting down with an iPad and the teacher sitting up the front and each child’s learning being competency based or whatever the current jargon is for it, so that they are all learning at their own pace?

Dr Aitken: There are two issues there. I am not sure developmentally when they would be ready for that, but in mid-primary school I think they would be ready for that. My children started learning Mathletics, I think, in grade 3 or grade 4. They were fine at it because it has the game side of things and they are learning stuff. They are keen to do it, which is really good to see. Around that age I think we could start to go with this competency-based learning. But with regards to the iPads and stuff, I am a bit ambivalent there. I am not sure which way to go because the iPads are mainly a

consumption device. In the early years it is great to be able to click and play games and do things for learning. But when you want to do the heavy lifting you need that sort of truck; you need the light laptop or something like the ultrabooks they have these days. It is not a big heavy laptop, but something that is light and convenient and has a web browser and you can type fast and do drawings. I think in middle school, grade 4 or 5, you probably want to start having those sorts of things, but earlier on something like the iPad would be useful, but you can add keyboards to them too and do stuff. Apple is definitely pushing them as creative devices as well as consuming devices. They have word processors and spreadsheets and that sort of stuff, but I am not convinced.

The CHAIR: I am so pleased to hear the way you have described it in a very basic level for us.

Dr Aitken: It is always hard to know what people understand about these things.

The CHAIR: I guess the other thing is, we are into an area of social networking where children at a very young age are joining Facebook and other—I am not quite sure whether Facebook is a chat room—chat rooms. Some people are very concerned at that social interaction that parents will not have control and other people say, “Well, it’s the way things are going to go.” How do you feel about things like Facebook, Twitter and the chat rooms? Is there an age when they come in?

Dr Aitken: My son turned 13 a couple of days ago, and it was his rite of passage to get a Facebook account. It is the age they allow you to do it. Some of his friends have done it earlier by lying about their age. We said, “No, we’ll wait till you’re 13 and it can be a rite of passage when you get onto Facebook.” I think definitely Facebook is the future, of course; it is massively used. It is the way to connect with people and interact with people you do not see or have not seen for a long time. But educational issues are another thing. I use Facebook and Twitter and other things equivalent to Facebook—LinkedIn—in my university teaching. I tend to try and push the envelope with using these things. I see a number of different networks. Facebook I classify as your social network; it is for your friends and your families where you put your photos up when you go out to parties and have drinks and so on. Some studies show students do not like it when we try to put educational things in there or when their university or their school comes into their Facebook arena. I think this is probably a good thing. We want to keep separate our personal life from our learning life and our professional life. In my course at university I use LinkedIn. LinkedIn is a lot like Facebook; it has this chatting wall facility, but it is more focused at professional networks, at your career network. I say to students, “Have your Facebook account for your social life and you can do anything you want there, but use LinkedIn for your professional career.” This is where you build your CV for the twenty-first century. A lot of employers these days do not ask for a CV; they say “Connect with me on LinkedIn so I can see your history; this is your CV.”

The CHAIR: Really?

Dr Aitken: Yes. These sorts of things happen. That is the sort of career path. I am thinking: what is happening in between for students; how can they use these sorts of network tools?

The CHAIR: And when?

Dr Aitken: And when. I think because of issues Facebook has had with bullying and this sort of stuff, which is common and talked about, 13 is probably a good age to start students on Facebook for their social network. But I think we also need some sort of learning network. This is where you would not talk about what happened on the weekend. It is a focus on the learning. You may know there is another network tool called Yammer; this was a product for corporations to have their own internal Facebook and network. You had your own page and you can communicate and chat with your other employees. It was a knowledge sharing and knowledge management tool. Just recently Microsoft bought Yammer to make it into their product. So, it is made for organisations to have so they can have a social network or a worker network. I think schools need something similar for inside the school, so you have your social network inside the school—your learning network, if you want to call it that—and each class would have its own learning page. The students would be in that

learning page so they can talk with each other, perhaps during school hours or while they are doing things outside school hours, but the focus would be primarily on the learning side of education. Anything about weekends, you go to your Facebook account.

The CHAIR: That would be LinkedIn or Yammer?

Dr Aitken: LinkedIn I see as the professional one for careers or maybe starting from university level. Facebook is for the social, but there is nothing really in the middle that I know of. But Yammer was one you could buy and set up, basically, for your school. Maybe the education department could set it up for the whole of WA to use as a school-based networking tool. I think that would be good. There are a lot of benefits from these sorts of tools connecting people.

The CHAIR: What about community groups, if it is, say, the local sporting club?

Dr Aitken: They would probably use something like Facebook because that is your social life. They would have a page on Facebook for the sports club.

The CHAIR: Environmental groups?

Dr Aitken: Probably Facebook as well. That is your beliefs; your personal missions and so forth. It is not as clear-cut as I am trying to portray it, but I think the separation is important. Apparently in the US there are some employers who, for interviews, demand they can get access to the Facebook account of the person; they want to log in their password so they can see all the history of that person on Facebook. I think that is wrong. We keep separate our personal life from our work life and from our schooling life. That is why I have suggested this sort of separation.

The CHAIR: We actually heard as a committee how some employers are asking younger members of their firms to look at students' friends' Facebook pages before they will give them an interview, to see what their background has been.

[3.45 pm]

Dr Aitken: I worry about that, but I think maybe if it is on the LinkedIn side, the professional side, looking at someone's public CV; that is fine, to check what they have done and so on.

The CHAIR: No, this was Facebook they were asking.

Dr Aitken: Facebook is different. What you do on the weekend should be what you do on the weekend, and hopefully does not influence your career opportunities.

Mr P. ABETZ: Although if you smoke dope at the weekends, it is going to affect your working capacity.

Dr Aitken: That is true. As long as you get to work to work on a Monday morning in a sensible state, that is for sure. I should say, though, talking about these networking tools, people often bring up collaborative learning, learning in groups and so forth. I have just finished some research in the last couple of years at Curtin. I have a class of 700 students—so it is not small—and we are trying to get collaborative learning going there. We have seen that really a few students tend to actively participate in this collaborative learning, especially when others can just lurk by and see the results of the collaborative work that the main ones are doing. You get lots of lurkers. They believe they are gaining the same benefits. The people who actually actively participate in the collaborative learning or the task say that they actually gain from doing the task, but if the people can get the results of the task just as easily, they say, “We'll sit back and just lurk.”

Mr P. ABETZ: Let others do the work.

Dr Aitken: Let others do the work. So I am not so hot on collaborative learning, but peer-to-peer interaction is good. We all know that often the best way to learn something is to have to teach it. Teaching to your peers really gets you to think about and construct the knowledge and build the understanding before you can present it coherently. I am all in favour of that one-on-one, peer-to-peer or maybe small groups, but large collaborative learning has some issues maybe.

The CHAIR: A question that has been going through my mind is that we as members of Parliament spend a lot of time with our constituents dealing with the same issues. Peter would have an issue his area for someone that would be exactly the same as someone in my area. The same thing goes for local government; it is the same issues going on. I was thinking that we should have some way of putting that information out there so that you are not just responding to one person, but it is across the board. We could basically then either get rid of local—probably local government rather than state government! I am thinking that we do not need all those levels! If I wanted to do something like that to put all the information out there, what type of system would you use for that?

Dr Aitken: Are we talking about the social networks still or more generally now?

The CHAIR: It is not social, because it is not what you do at the weekend; it is more community education.

Dr Aitken: Sure, so you need one of these web services or these network services similar to these social networks and professional networks, something for these community issues or government issues, which can give people the chance to interact and communicate and for the politicians to talk to all those particularly interested. I think one of the things the web does really well is allow niche groups to connect, no matter where you are in the world or in Australia, and, as you say, remove the redundancy from 10 different people talking about the same thing. I have similar issues in higher education as well. We have the same course taught at 10 different locations around Australia. The work is done 10 times by the lecturer and so forth.

The CHAIR: Yes, it is the same thing.

Dr Aitken: You can get benefits from much more efficiency and stuff. Also, you can then get more expertise in the area—share the expertise. One of these sorts of networks built for community issues could do similar things to what you ask for, for sure. It is just the demand there and someone to lead it.

Mr P. ABETZ: In education, different people I guess have different learning styles, for want of a better way of putting it. I am a person who learns quickest by interacting with somebody face to face. Do not give me a manual about some computer program—I will never read it. But let me play around with it for an hour, and then get somebody who has used it to spend one hour with me and I am up, off and away. Other people would much prefer to read a manual. Where is that human interaction side? I think there is an educational sense of community aspect to it. I fear a little bit with distance education, everything being on the intranet, everybody can do external university courses, they actually miss out on that social interaction, which I think is a really important part of education.

Dr Aitken: I agree. The main thing that you said is that people have different learning styles. Like you say, some people need that hands-on, practical, face to face, so it would be good if the educational system could cater for the different styles—very much so. At the moment, of course, in K–12 we have the classroom environment—that is what you have got. In the universities these days we have the face to face, we have online or fully online and now sort of a blended combination of those. There is always going to be a need for face-to-face interaction, coming together in the classroom, discussing in small groups. That said, some of my best students are my fully online students, because they are there, they are motivated; they are not coming to the class because they have to come to the class and sitting in there, not inspired. As long as you can find the right resources and context for your type of learning and you are motivated, I think things are fine. I do not think we will ever get rid of completely face to face, fully online.

We have a drop down in attendance at our lectures these days of course, because a lecture is more like an oration, although we try and make them interactive. Also, we have videos of the lectures, so students can watch them at home, so why go along to the lecture and park and everything when you can watch it? A lot of our resources are fully online; students can do pretty much everything they

could do in class. You can do a lot of the interaction via the online stuff now with the videos and talking and seeing people. One of the big pluses of the virtual world is virtual laboratories. You can do science experiments, physics experiments and chemistry virtually. Most of astronomy these days is virtual. All you have is a whole lot of data collected by some telescope somewhere in the world, which you never look down the little tube of, of course; it is all done by sensors. A lot of the science and learning and research is virtual.

We also do some research at Curtin using Second Life. Have you seen this? This is where you go in there and become a persona in a 3-D world. We do some active role-playing with some Norwegian students. It is a collaborative learning exercise, so students from all around the world come into this room and they have their avatars and they interact. They do a sort of sales pitch and the students have to ask questions. They are interacting, but they are all around the world—some in their pyjamas probably. They are interacting and seeing people and expressing things. Learning styles are very important and we need to cater for more. I do not think online rules out interaction.

The CHAIR: But should online be available earlier? Should children stay at school for year 11 and 12?

Dr Aitken: Year 11 and 12?

The CHAIR: As you say, some students now go to uni and they might only go to uni for 10 or 20 per cent of their course; the rest of it they are now doing at home online. There are some students who can work successfully online. Whilst we have legislation that says education is compulsory to the age of 17, does it have to be compulsorily in schools?

Dr Aitken: I tend to make a distinction between the K–12 and the higher education in that in higher education we try to teach students to take responsibility for their own learning, whereas I see in K–12 the teacher is more responsible for their learning. Maybe in later years they do, but they are just learning to self-regulate their learning and what they need to do. It is more about the teacher says, “Do these things in class”, and then maybe “Do some homework” and you have done your learning, whereas at university pretty much we say, “Here are the learning outcomes, the competencies you have to achieve. Go away and achieve them”. We do provide more services of course to assist them with that—resources and stuff. I think in schools they would be using services like I mentioned—the Mathletics and virtual science labs and virtual physics labs—but I think it is more in a controlled and directed way. The teacher says, “Do these things”, rather than just let them go and do them as they see fit. That is the sort of distinction I make. I would not see any reason not to use online things in schools, but it would be during the day in the classroom or at home maybe for extra homework. That is my distinction. Does that make sense?

The CHAIR: It does. I had never thought about that. I have heard students say how little they nowadays go in to university. It is very different to when we went to university when you were there 40 hours a week. And they are succeeding.

Dr Aitken: There is a problem there, too, because sometimes students see they only have so many contact hours—12 contact hours—and they think, “That’s all I have to do each week”. We try to emphasise that each course is 10 to 12 hours a week, so it is still a full 40-hour load. In the first years, it is a bit hard to convince them of this. I think of myself as a personal knowledge trainer, to keep on whipping them and making sure they are doing their mental exercise.

The CHAIR: Unless there is anything else you would like to add.

Dr Aitken: About those questions or other things?

The CHAIR: Anything.

Mr P. ABETZ: Anything to help improve educational outcomes.

Dr Aitken: One thing that was mentioned was open source in schools. I think in the past of course when everything was installed on your machines and you had to pay licences and so forth, it was

good to get open source software because it was free or cheaper and easier to maintain. But now with the use of these web services, then we really do not need to buy proprietary software on your machines; you can get by with an open source machine which has just a web browser. Google make software called Chromium OS, which is an operating system that runs on a notebook or a PC, and it is fully maintained by Google so you never have to update or install it. If you lose it, you just get a new one, type in your password and all of your data is there again. It is pretty much zero maintenance.

Mr P. ABETZ: You say “data”—your documents?

Dr Aitken: All your documents are in the cloud. So they are not really there; they are just basically saved in the cloud. If you break it or you lose it, you get a new one, sign in and you are back to where you were. There is little need for maintaining or backing up or storing stuff on a server. I think on the client side of things, sure we can go by now with completely open source. Just a web browser is pretty much all you need. There is Mozilla web browser and Google’s Chrome web browser. Now we are having these services, which are proprietary services, like the Mathletics, like the Spelling Bee and so on. There you are going to be paying big dollars, and you are committing to them. That is a big decision to make: who you go with and how they integrate, as I mentioned before, to provide a holistic view of the student. Open source still has a place, I think, as the client side of things.

Mr P. ABETZ: What about security with the iCloud? You put your password in. If some clown gets hold of your password and deletes everything you have ever put up there, I would be a little distressed, to say the least.

Dr Aitken: Good passwords are important. The days of using your name or your birthdate are gone. A lot of systems these days put requirements on your passwords, so you have to make them stronger and you change them every so often.

People getting in there, then yes you have problems. Maybe the excuse will not be, “My dog ate my assignment”; it was “Someone got in and deleted my assignment.” These systems are also very good in that Google often does not ever delete anything. It keeps a history of things. Even if you went to your document and deleted all the stuff in there, you can go back to a week ago and see what it was like or a week before. One of the things we do at university is, when students have been working for four weeks on an assignment, I can go and look in their Google Doc and see that they just started last night or this is what they did three weeks ago and I can tell how they have been working on it. It is great to detect plagiarism too, because plagiarism is usually a copy and paste the whole thing in at once. You can see that sort of stuff.

Security is an issue. One of the other issues is: where is where is the data stored? I know some of our overseas students have worries about using systems that store the data in the US, because some of these systems do, with the Digital Millennium Copyright Act or whatever the US have where they can get access to the data and see the files. They are worried they are not stored in Australia. Curtin has gone with Microsoft for their cloud services. I think UWA has gone with Google. There are issues on both of those ways. But security is a big thing. I guess losing the thumb drive is a security thing, too; all your files are on there, and it has got all of your work. I think that is about all.

The CHAIR: Thank you. In that case, I thank you for your evidence before the committee today. A transcript of this hearing will be forwarded to you for 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 these corrections and the sense of your evidence cannot be altered. 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.

Hearing concluded at 3.59 pm
