

# SPEVI Presentation 2013 – Auckland

## Mobile Learning Technologies – Fad or Fantastic?

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### **School Context**

SA School for Vision Impaired (SASVI) is based in a south western suburb of Adelaide, South Australia. SASVI comprises a school which caters for students from age 5 to 18.

SASVI also has 2 Vision Support Units in mainstream public high schools north and south of Adelaide. The staff in these units caters for between 15-20 students each year.

Lastly, SASVI has a Statewide Support Service which supports approximately 150 students across metropolitan and country South Australia in public, catholic and independent schools.

### **Where the original idea came from**

At SPEVI, Sydney in 2011 we sat at a presentation and observed a delegate using her iPhone with a wireless keyboard and voice over and head phones. We at SASVI had JUST bought our first iPad 1 and were so excited at the connectivity of the device for this person with vision impairment.

We decided that we wanted to know about ‘i’ devices and their usefulness with students at SASVI. We began planning to purchase iPads and to conduct surveys to find out the current attitude towards the devices.

Our decision to purchase one iPad 1 at the start of 2011 was to investigate the potential of the device. We found the iPad 1 to have the best built-in accessibility options, to have good availability (after the initial stock shortages) and to also have an unexpected level of “coolness” amongst students as a desirable technology in the mainstream.

Other mobile learning devices such as tablet computers were starting to become available but were not as robust with their physical build or their operating systems. The Android operating system, while having accessibility features built-in, was installed onto many different devices and did not seem to be as robust as the iOS (Apple operating system) at the time. The Android operating system

seemed to be somewhat buggy when used with accessibility turned on and there was a lack of zoom functionality. This has changed over time with Android rapidly catching up with iOS but at the time of purchasing the iPad 1 this was certainly the case.

We decided to go with the iPad rather than an iPhone or iPod touch due to a number of factors. While the operating system on each of the devices, and therefore the accessibility options were also the same, the screen sizes on both the iPod Touch and the iPhone were potentially difficult to use by some students. The price tag of the iPhone (if purchased outright) or the necessity of an ongoing contract also made the iPhone less than ideal. The iPod touch was considered, but it was decided to go with a consistent pool of devices, so iPads were chosen.

With its built-in accessibility options, we decided the Apple iPad would be the best option for our students. The ease of use and familiarity of the technology, along with its presence in mainstream media has helped the initial uptake by the staff who would be working with the students and the technology. We believed that the staff support of any new technology would be critical to its success.

We knew that the new iPad 2 would be launched in April of 2011 and we decided to wait until that time to purchase a number of them as an initial trial run and for research purposes. It was decided that the iPad 2 would be better than the iPad 1 because it featured an updated processor, were lighter and most importantly featured the addition of front and rear facing camera, and were priced the same as the iPad 1 was at that time.

## **Surveys**

Over the past two years, the staff and students at SASVI have been investigating the merits of mobile learning technologies. We decided to investigate various types of mobile learning technologies to determine their viability as a learning aid for the students at our school. Students were aged between 5 and 18, and had various levels of vision impairment ranging from 6/18 vision to students who have no vision at all.

Before starting to deliver this technology to the staff and students of SASVI, a survey of the participating parties was conducted. A survey was conducted before the trial period to determine current knowledge about and feelings towards mobile learning technologies, specifically Apple iPads, iPods and iPhones. 147 surveys were distributed with 50 respondents.

The results of the survey showed that some students had had an experience with 'i' devices at home, usually a family member or friend's device. Few students had access to their own device and they were generally used for game playing or listening to music.

A number of the families who were surveyed used I devices, generally I phones but felt that they were limited in their knowledge of the device and ways to use them with their child.

Staff at SASVI had very limited experience with the devices so were excited about using the devices and could see a number of uses for them in the classroom. They were also a little nervous about teaching students.

Overall results show that staff and families wanted training opportunities in using the devices with students.

### **Set up of the iPads**

The iPads were purchased in two batches. The initial batch consisted of 12 iPad 2's with a 32 gigabyte (GB) capacity. We decided on the 32 GB capacity rather than the 16 or 64 GB capacity to allow staff and students to download and install apps, utilize the space for audiobooks, music and movies, as well as space for photos and videos to be taken on the device. The 32GB also gave staff the freedom to install a large number of apps of their choosing that would suit their needs and the needs of their students. We decided on the wifi model of the iPad, rather than the 3G version due to the ongoing costs of internet access through 3G and the initial outlay required to purchase a 3G iPad. We also were in the process of having wifi installed throughout our school, so this made the most sense.

For example an Advisory Teacher may be supporting students in Kindergarten (age 4) right up to high school age students so a variety of apps is necessary. The Italian teacher who is based at SASVI required apps that assisted in the teaching of Italian. It was hoped that this would 'future proof' the devices allowing for more content to be added without the need to delete others while still being in a reasonable price range.

Along with the iPads we purchased 12 smart covers for screen protection and to help tell them apart, six Bluetooth keyboards, an HP airport printer that the iPads could wirelessly connect to so that we could print directly from the iPads, a 13 port USB hub so that all of the iPads could be docked and updated at the same time, and finally an iMac which had the specific purpose of being a dock for the iPads. The total cost of this initial hardware was \$12,000

We also purchased a small number of apps from iTunes for the iPads to demonstrate to staff a little of what the iPad could do. Initially we chose to purchase Pages, Garage Band, ROMA and iMovie for staff to explore as well as many other free and lite apps to give staff the opportunity to find apps that would work for their students. The iPads were also loaded with some music, a video and some audiobooks. We also ensured that iBooks was installed on the iPads

to test out the app with accessibility features such as VoiceOver and Zoom, with both reading books and text books.

At this point we had 12 identical iPads which were rolled out to staff ready for training.

We knew from past experience that technology handed to a staff member without training was not used and often literally put in a cupboard and never used. The initial batch of iPad 2's were distributed to classroom teaching staff, administration staff and to some school support officers (teaching aides) to offer them the opportunity to get to know the technology before using it with their students. Training on how to use an iPad was provided for the staff including;

- how to turn on and off,
- how to download apps,
- how to access email,
- using the iPads to connect to the internet,
- taking photos,
- how to use the Pages app,
- how to download and read a book with iBooks,
- a quick play with Garage Band and
- how to connect the keyboard
- how to access and use the built-in accessibility apps including;
  - VoiceOver,
  - Zoom,
  - Large Text and
  - White on Black setting.

The staff used the iPads over the course of a number of weeks of the school term and then in the school holidays. Staff were encouraged to collaborate with others about apps they were purchasing, things that were working or not working. Regular time was given at staff meetings to continue the training and share ideas.

The plan at this stage of the process was for these 12 iPads to go into a loan pool to be borrowed and used by classes within the school. This is the reason they were all set up to be identical. This would mean that a classroom teacher could pick any number of the 12 and they could expect that the app they wanted would be in the same place on every iPad. We strived for consistency knowing that if it became too hard to easily use the iPads, they would not get used.

After the initial iPads were setup, tested, distributed to staff and used, it was decided that these staff should keep the iPads...which really means the staff didn't want to give them up... as they were proving to be a useful tool in provision, preparation and recording of learning.

It was decided that more iPad 2's would be purchased. Another 10 iPads were purchased for SASVI's Advisory Teachers so that they could provide more specific information to schools and students about the iPads and to see if they would work effectively for individual students. It was decided that a class set of 8 iPads would be purchased specifically for student use.

It was again decided that these iPads would be set up identically. The iPads were all set up using the iMac, the iPads for the AT's were set up using a different email address but again set up so that they could be swapped between staff, especially so that if staff were to change it would be easy to move the iPad onto another staff member. We also bought another 4 iPads for use in our satellite programs based at Charles Campbell College (formerly Charles Campbell Secondary School) and Seaview High School for staff and student use. Total cost for this next 22 iPads was approximately \$16,000.

### **What we learnt about setting up the iPads**

We began to realize that this set up (i.e. the iPads having shared Apple IDs) was not ideal. We found that the iPads are best suited to being setup for use by an individual, not set up so that many people can use them. They are a personal, one person use device, and when they are set up in this way, the user gets more out of the device. In the future we would love to see iPads with logins so multiple users can access their individual, customized profiles. This is especially clear when thinking about access to the users own emails, and it gives the user the power to download apps that suit their needs. The process we started with also meant that one person needed to take responsibility for the maintenance of all the iPads which was incredibly time consuming.

### **The ongoing learning**

Once the set up was complete and the staff training was underway we felt ready to provide students with an opportunity to use the iPads. Students used the iPads in a variety of ways depending on the setting.

While Advisory teachers were showing schools and students across the state ways in which iPads could assist with access to the curriculum and students in the units were developing a love of all things 'i', students in the school worked on iPads in a variety of ways; individually, in small groups and as part of whole class lessons.

Students use the iPads for

- research
- recording written information
- recording their own voice
- reading books
- listening to audio books

- photographing information, friends and themselves,
- accessing the interactive whiteboard via wireless technology or by photographing the board
- email
- calendar/diary
- maps/other orientation and mobility apps
- recording and videoing themselves

Staff at SASVI use the iPads

- To plan and prepare lessons and units of work
- Utilize apps to expand student learning
- to quickly and easily photograph and video students recording of students is particularly useful in order to collect evidence and also when assessing a student as it provides future reference.
- Email
- Recording notes (both typed and photographically)
- Calendar

Students from mainstream schools, their school staff and families were invited into SASVI for a short course which provided opportunities over 2 days to develop skills and knowledge using 'i' devices. This included connecting to refreshable Braille, accessibility options, looking at uses for high school students, using maps for orientation and mobility and using iPhones

### **The positives from iPad use at SASVI**

Most members of staff and students were extremely positive about the introduction of iPads. Staff were willing to take the iPads home and use them for various purposes helping with their confidence with the device. They were willing to 'play' with their iPads and persevere through some of the teething difficulties in the setup process.

Staff were also able to use the device for their own purposes in some respects, building a familiarity and comfort level with the technology before they needed to show students how to use it.

For the students, the iPad was a new piece of technology that they had heard a lot about from mainstream media. It was something that was being used by their siblings and by other students they knew. It had a cool factor to it and others wanted to be involved in its use.

The built in accessibility options are functional enough to provide access to most students at SASVI, making this mainstream technology very useable and desirable. Many students, after some training were independently able to adjust

the settings of the iPads to suit their needs, even if another student had used it before them. Students were, on the whole, happy to try the technology.

Students would work their way through an app to see if it would work for them, ask questions about how an app worked and then apply that knowledge themselves. They would share what they had learnt with other students, making for a collaborative learning environment. A number of students have found new and easier ways of accessing information through the iPad.

The ease of zooming into a news article on the internet, and the VoiceOver reading function built into iBooks have been of excellent value to some students. The inclusion of the white on black inverse colour setting was another very helpful feature. The use of a wireless keyboard with the iPad has also allowed students to have access to a word processing device in locations that are better suited to their individual learning needs, for example in the classroom at their slope desk rather than the Information Communication Technology (ICT) room.

Students in secondary schools had the opportunity to access many of their text books on the iPad. By having text books on their iPads, the students were able to cut down on the amount of material they needed to carry with them, sometimes having the opportunity to listen to the material, rather than needing to read it and also have the ability to make the text into a size that suited their purposes.

The ability to listen to audio books on the iPad also meant that students had access to English based text in an oral form, rather than large print or on cassette or CD. It is important to note that many of these functions were available previously in the form of an iPod, a laptop or a large print copy of a text, but the iPad provides these facilities in one relatively small device.

For students who are totally blind, the built in VoiceOver feature, combined with the use of a refreshable Braille display (such as Humanware's BrailleConnect), provided adequate usability for the standard 'out of the box' apps on the iPad. When 3rd party apps were involved, however, things became a lot more hit and miss.

A couple of extremely competent Braille students (and keen technologists) were asked to compare the iPad (with VoiceOver and a refreshable Braille display) to a Humanware BrailleNote Apex to see which was more effective for them in everyday tasks. Using standard apps such as notes, contacts, mail and Safari, the students were able to effectively navigate and input into the apps with a reasonable user experience.

Another advantage of the iPad is its ability to display what is shown on an interactive whiteboard. With 3rd party software, a student is able to view on their iPad screen what is shown on the interactive whiteboard and with some tweaking and practice, can zoom in on this information. The downside with this is it can be

quite difficult to set up within the school system. Proxy servers and school security processes can often interfere with the remote desktop display app and software and stop the process from functioning. This being said, when working, this can be very effective and useful.

### **What we would do differently**

SASVI waited for iPad 2's to become available because they featured front and rear facing cameras. The cameras that featured on the iPhone 4 were of excellent quality and it was hoped that similar cameras would be a part of the iPad 2. We believed that these cameras, along with the 10 inch screen on the iPad, could be used by students, particularly in mainstream schools to access written work on boards around their classrooms, similar to the way the Optelec Farview could zoom-in on an image on a board in the room from some distance, take a photo of it and allow the student to have an larger sized image to work from. Unfortunately the iPad 2 rear facing Camera quality, along with the zoom were simply not good enough to be used as we had hoped. The newer iPad 4 now features a much better camera and is proving far better for students. No doubt the next iPad will have an even better camera and might possibly be an alternative for a Farview, but only time will tell.

Some frustration with the iPad has been noted around the compatibility of VoiceOver with some 3rd party apps. It has also been noted that the picture quality of some 3rd party apps when using zoom is greatly reduced making the image heavily pixilated and frustrating for some students with very low vision.

Finally, the ongoing product replacement cycle of the iPad (new iPad every 12 months or less in the case of the move from the iPad 3 to the iPad 4), has been seen as a source of frustration by some users, there is always a pressure to have the latest and greatest because of social convention but also because the latest one has one feature that might be useful (a slightly improved camera or higher resolution display). While it can be seen as positive in some respects (improvements, doing a better job faster), others might view it as another outlay of money for not a whole lot of gain.

In mid 2012 the iPads were set up as an individual tool. This, of course, would cause other issues. Individualizing iPads is proving to be far more expensive, with issues arising about purchases apps.

Finally, the apps themselves caused some issues. Not every app worked well with VoiceOver or the Zoom function. The apps that were designed and released by Apple all worked very well with the accessibility functionality but some apps that were designed by other companies did not. One example is the FaceBook app which even after complaints from users has not been improved so that it works with VoiceOver hopefully over time this will improve.



## **The Future**

Choice!

Just like the choice of which piece of technology to use, the choice of which app on these devices to use. Our hope for the future is that students are shown a number of similar apps and have the ability to choose the one or ones that best suit their needs. For example notes, pages, and quick office pro all allow you to perform word processing but one app may suit one user while another app may suit someone else better.

What will happen in the future of mobile learning devices at SASVI? We will be continuing to investigate other devices than just the Apple iPad. We have recently purchased a number of other 'tablets' and these devices need to be investigated to see if they will provide a better technology solution for our students.

The new Apple iPad 'mini' smaller version of the iPad along with the iPhone and iPod Touch also need to be monitored, as well as the latest versions of the iPad as they come out. For now the iPad is at the top of the mobile learning technologies ladder at SASVI.

Sharing is critical to any ongoing success with technology and especially with iPads and other mobile learning technologies. Sharing of exciting new apps, a new iBook, the latest photos you have taken or your latest status update encourages others to use their devices and collaborate.

## **Conclusion**

The question that we are often asked after talking about iPads and other mobile learning technologies by parents is, "Should we buy one for our son/daughter?" The answer is simply, "It depends". As with all technology, one size does not fit all.

It is important to consider on a case by case basis exactly what the student is trying to accomplish and what the best piece of technology currently available to provide access to the curriculum for that student is.

Do iPads have some amazing advantages? Yes.

Is the price tempting in comparison to other more specific assistive technology devices? Yes.

Are iPads the be all and end all of all assistive technologies? No.

Will they replace all other assistive technology for people who are blind or vision impaired? No.

Do they have a place on the shelf of available assistive technologies? Absolutely.

The iPad was designed as a tool for consumption by the general population which helps give it its price. As such it was not designed specifically with users who are blind or vision impaired in mind. It can be effective as a learning tool but it does not solve every problem. Unfortunately, in reality, an iPad is a device that has been designed for use by the greater public. This means that the technology is not specifically designed for people with a vision impairment or are blind and accessibility options are added as a feature rather than the sole focus of the technology. The advantage that we do gain from this, however, is the far easier to reach price tag. With some training, some patience and experimentation with effective apps, the combination of some other technologies and an optimistic attitude, we have found that iPads certainly have a place in the hands of our students in a hugely wide ranging number of applications.

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