IPAD PILOT PROJECT REVIEW

As part of an iPad Pilot Project, conducted by five primary schools in Dumfries and Galloway, I have been asked to give feedback on the project so far, by sharing observations and recommendations. This is in no way a formal study, rather it is a collection of my views. Whilst I could have structured my findings as a research paper and thrown in some quotes, as I lack the knowledge and skill of how to conduct research at the moment, it would be pointless as I don't have any proper evidence. Our school is continually trying to improve, so many facets have changed over the last session that could influence the performance of our pupils other than introducing iPads: for example our new approach to Mathematics. I am employed by a local education authority in Scotland and have no affiliation with any manufacturer, reseller or anyone else that may have a vested interest in making a profit out of education. I am not an Apple Distinguished Educator.

BACKGROUND

I have recently started my fourth session as a full time teacher at Brydekirk Primary (a small rural school in the south of Scotland) where I teach a composite P5-7 (Y4-6) class of 19 pupils. This is my sixth session as a Primary Teacher, since completing a probationary teaching year, so I am not far into a teaching career. Before retraining as a teacher, I was a Software Engineer. Two sessions ago I suggested that our Pupil Council make a proposal to win a class set of 20 Apple iPad mini tablet computers offered as part of a five Primary School Pilot Project. The Pupil Council accepted this suggestion and their proposal was subsequently successful. In May 2013, we received 20 iPad minis (10 black, 10 white), with apple magnetic covers (10 blue, 10 green), a storage, charging and configuration box along with a Mac Mini PC to configure the iPads using Apple iPad Configurator. The company who delivered and setup the iPads also installed about 20 apps, with various functions, which I had requested.

SETUP

We have a ratio of 1:1 iPad minis in our class, including the teacher, where each pupil gets his/her own machine. Occasionally, the P1-4 (R-Y3) class borrows some of them.

At first the iPad minis were not connected to the school Wi-Fi as the Authority ICT Service had not been involved and were not, therefore, prepared for the project. Thankfully, we managed to get the devices connected after a few weeks but their initial impact and usefulness was really compromised without a connection. This connection did cause some troubling issues at first as it meant there was unfiltered access to the Internet. I managed to work around this by installing and configuring a browser app called Mobicip that allowed me to set content filters and also access the history of Internet usage. This required communication with parents and a new Acceptable Use Policy, which I wrote.

We also had an Apple TV to connect any iPad mini to the interactive whiteboard although our setup required a DAC converter to make the sound work.

Maintaining the devices is reasonably straightforward but I would recommend a more powerful device management software than Apple Configurator if they are to be rolled out on a bigger scale. Once volume purchasing is understood by the manager of the system and is properly setup, keeping devices and apps up to date

is straightforward. Access is something that I have supervised personally where our education authority ICT technician only had to enter Wi-Fi passwords. Our iPads have proved very reliable and the battery life is excellent, though I have been careful to instil good habits in my class on when to recharge batteries rather than just always charging them every night. We also put screen protectors on the iPads and the class designed and sewed a felt bag for storing individual devices.

SHARING

I experimented with a few apps for sharing work and eventually settled on Google Drive, where I created a school account and logged in on each iPad mini (in classes which lack discipline, this might prove more problematic). Google Drive has been brilliant for sharing work as it is easy to use, fast and reliable. We also used Kid Blog and each pupil had his/her own Blog to share work between them and their parents using a password system so that all work saved on the devices could be accessed. Kid Blog did not have Safe Harbour status although the company did provide details of its security when asked but I still felt it was essential to prohibit the use of identifiable information. Incidentally, knowledge of Data Protection is strongly recommended when setting up pupils in new apps. This required research and discussions with our authority's Data Protection Officer and also the ICO but has led to a much stronger personal awareness of data protection issues altogether.

TEACHING AND LEARNING

The initial impression of the iPad minis blew me away with respect to their creativity in an education context. You can make great quality music via Garageband. You can shoot and edit amazing video, including animations. You can produce professional podcasts; all on one device. You can then take all of these things you make and share them with ease; provided you know what you are doing. iPads are easier to figure out than PCs, in my opinion, although the amount of new material out there can be overwhelming and moving from PC to tablet takes an initial adjustment. Most of us have seen the slick ads and witnessed people queuing up and celebrating buying these devices. Reflecting upon the last year, I have tried all of the creative activities above, whilst teaching a class, and I have evaluated them all with one thought: what is the impact on learning?

CREATIVITY

When making music and video, the teacher needs to be clear about the pupils' learning outcomes. For example, as part of the pilot project we received visits from a dedicated Garageband Music Tutor who taught us how to use Garageband, whilst also learning about sound recording, basic song composition and also playing as a band. These lessons were very successful as we learned to use Garageband whilst learning about music. Garageband offers teachers a way to play selected scales and notes which I have not seen in any other instrument or music teaching aid. This block of lessons was a success as it taught us how to use Garageband, a powerful sound recording and music application, and also taught us about music. Our music teacher witnessed what the class learned and produced with Garageband but did not use the devices in weekly lessons.

With respect to video, early on as a class we made a school tour video for our class website. I organised the class into four groups and then assigned different sections of the video to shoot and edit. The subsequent 9 minute video took more than 6 hours to plan, shoot and edit. The biggest lesson that we all learned was how difficult and time consuming it is to put together a reasonable quality video. My learning intentions were focused upon team work skills including listening and talking and whilst these aims were achieved, evaluating this exercise, I would not plan to do it more than once or twice a school session as it would take up too much time for too little learning. In my experience, shorter video and animation is far more successful than longer video pieces as learning is completed in a shorter amount of time. Using the Explain Everything app is a great way to create a short video of a presentation (Keynote) or Mindmap (Popplet) especially on topic work or book studies and such, as it's simple, quick and effective. Although iMovie is a wonderful app, just videoing an experiment or presentation or speech etc without an edit saves time which is always at a premium in a classroom.

eBook another medium where the class can create and share. Bookcreator is a versatile app that allows the class to make eBooks with videos, images, writing and audio allowing them to edit the look and feel. These can now be shared and even sold on iBooks. At the moment the children are putting topic work in these to organise them and share them by Airdrop and we are gathering together collections of the pupils' work in eBooks.

Other ways to create include different art apps, like Brushes and Sketches for example and mind mapping apps like Popplet. Brushes and Sketches and other art apps offer a different medium for the artist. Working with our visiting Art Teacher, we have used the iPad minis with end results of interesting compositions. Using Explain Everything to present the resulting artwork or mind map with an explanation is a useful way to demonstrate learning and explain work.

There are some good books which detail how to achieve most of the above: *iPad Teacher Guide by Adam Foster* for example.

OTHER MODES

There are other ways to use iPads in class which are less well publicised than above, including: giving feedback, doing work, learning new things and incidental use.

GIVING FEEDBACK

By being able to record sound, video and images and share them quickly makes iPads very effective when assessing pupil's work as peers, teachers or parents. One example I completed recently was to get the pupils to make notes about their summer holiday in preparation for a two minute talk that the rest of the class was going to listen to and offer feedback in the form of two stars and a wish. The learning intentions were about speaking and using notes whereas the listening exercise afterwards was about giving useful feedback and then using the feedback to set targets. Once the class had their notes ready, I split them into four groups and gave the eldest in each group the responsibility of recording everyone and then sharing it to a folder on Google Drive. Once this was achieved, for the rest of the week we listened to each group's recording, pausing between each speaker to record our feedback in a chart in our jotters. At the end of the week we shared the feedback and then targets were noted for their next talk or speech. I also marked the children as we went along and gave them targets to add to the rest their peers had given them. Having the children proficient at recording and sharing using the iPad makes this task straightforward. Previously, I might have used an Easispeak microphone or recorded on the computers but it would have been far more work to share especially for me the teacher. These recordings are something I tend to do once a term and are very useful when looking at how pupils are developing. iPads are therefore a great way to share work and give feedback. We use Kid Blog a lot to do this too where generally the pupils will take a picture of a piece of work with the iPad (just having everything in one device that is quickly utilised is such an advantage) and then post it onto their Kid Blog whereupon a peer, parent or I can comment. All of which is visible to me, anywhere with Internet. 1:1 iPads configured and used in these ways make giving feedback easier and permanent and also if the children are shown how to categorise and tag their work, it makes an excellent archive of evidence with little teacher effort. When sharing video, You Tube is second to none; however, pupils and parents have to be made clear about how video is used and shared.

DOING WORK

In the *iPad Teacher Guide*, on page 5, it states:

Some apps, particularly involving maths can be nothing more than glamorised worksheets. They may engage students but are they really improving the learning or making the most of the iPad's features? There can be a place for these types of apps but choosing ones that allow you to add photos, videos and audio have limitless potential in the classroom. Simply put, the iPad should be a tool within lessons, not the focus of them.

In my opinion, the effectiveness of worksheets, like iPads or any resource in education, depends upon what is being learned and how they are applied, both of which are controlled by the teacher. Worksheets and textbooks have been demonised lately by progressive educationalists and have at times, been banished from schools. Personally, some of the Maths apps considered here, I believe, are very effective at practising mental mathematics

knowledge and skills as they use 'gamification' to engage, challenge, give feedback and improve learners. Some are little more than rote learning but I have no issue with this as they can be effective at getting most children to learn number facts. Other apps go further and actually teach pupils the concepts and develop their learning, the best example of which I think is Dragon Box 2, which teaches algebra. Hopscotch is a programming app that is a great way to learn about angles and rotation whilst also learning how to program. The app iXL offers a whole maths curriculum, records each pupil's progress and gives reports on all activities. I use this to consolidate previous work covered and also to assess recently taught concepts. Generally, I structure my maths lessons by teaching our school maths curriculum to different groups, according to what they need to learn, in turns at the board and whilst that is happening the other groups will practise their mental maths apps and homework, and then complete some consolidation or assessment in iXL (they sometimes have other projects and problem solving). iXL has replaced the worksheets that I would have had to copy, issue, collect and mark. iXL does all of this for me now and I can see all of the results at home without having to stuff my bag full of papers or even mark them. iXL also gives instant feedback to the pupils for each sum or problem and even tries to teach them if they get the wrong answer. These are advantages for teachers as it saves time, is more effective and the pupils get feedback there and then.

I use Spelling City configured for our school spelling word lists in a similar way to iXL where it offers the same level of reporting on their performance.

Otherwise, Pages, Numbers, Word and Excel on iPad minis can be used to complete work, including larger typed documents which we complete occasionally. Generally, we prefer Excel on the PCs as Numbers is a bit fiddly and not as powerful on the iPad. The stage I am now at with my class is to challenge them when I think they are using the iPad or indeed PC in an inefficient way. Sometimes paper and pencil is all that is required and they take a picture of it on the iPad and then share it on Apple TV. In my class, efficiency of learning, with a balance of quality and speed of work, is king.

Reading is another area where iPads have had an impact. We use Accelerated Reader in our class where the app allows us to easily take a quiz and get on with our next book. The speed with which a pupil can complete this task on iPad, compared to accessing on a PC is no competition. Some pupils also use the Kindle app to read their own books and others have even used the local authority library eBooks on their iPads. iBooks has been used at times when we have been doing book studies where it is particularly effective at highlighting and adding notes. Being allowed to get samples of books and books that are out of copyright is especially useful and allows new resources to be sourced and downloaded in no time and at no cost.

iPads are a great way to give Additional Support for Learning. For pupils who struggle to write quickly they can record answers. ClaroPDF reads words, sentences or passages out loud when touched and there are many apps out there to assist writing. Otherwise for visually impaired children there are different accessibility settings that can be set to enlarge text for example. I attended a conference at Call Scotland in Edinburgh earlier in the year which was very informative and also purchased their iPad book which I'd recommend for any learner.

In PE we have used Ubersense to video and review different activities and also used Run, Lap, Tap to record times when training for the cross country. We were able to take the time from the latter and graph our progress using Excel.

LEARNING NEW THINGS

One way of learning using the iPads is to watch, pause and rewind video tutorials, on You Tube for example. The power of this was highlighted for me when members of my class learned how to solve a Rubik's cube and also how to make different loom bands. Having the iPad 1:1 is crucial for this and being able to pause and work out a given instruction is also important. Learning to follow instructions from such tutorials is an invaluable life skill as witnessed by watching children as young as six learning complicated tasks via the iPad and through using such methods to resolve DIY problems in my own home. It is empowering and develops independence and strong concentration.To apply this approach to the school curriculum would take a lot of effort to collate or make the videos and then to train the pupils on how to learn using this method, but such an approach has much to recommend it.

INCIDENTAL USE AND OTHER POINTS TO NOTE

We have since bought and setup four more iPads which are used by the P1-4 class which are setup not on a 1:1 basis but rather to be used by any members of the class. The P5-7 class is fortunate to have their own dedicated iPads as this saves many issues with sharing work. One of the biggest advantages iPads have over most netbooks and laptops is the instant 'on' feature. You can pick up an iPad and within seconds you are up and running which coupled with a dedicated 1:1 iPad that has all relevant apps setup and logged in saves a large amount of time. I would imagine many of the online educational offerings will see more customers as iPads really make them accessible.

One advantage of a 1:1 setup is the children are very possessive with the devices at first but in time, and with guidance they learn how and when to use them effectively and efficiently. Their use becomes accepted like any other resource in school: they recognise that iPads are a tool for learning and not a toy. I'm not sure how long this process would take if the pupils were only getting them for an hour a week.

As part of a five school project I have had some interaction with the other teachers who have iPads. Some schools have implemented the same 1:1 roll out as me whereas others, in larger schools, have used them with different classes. One school has not had them connected to Wi-Fi. Some of the teachers that supported the initial proposals have been promoted or moved post. We've also had some visits from teachers and headteachers in our authority who were part of our ICT Strategy Group, though this is now disbanded. There has been interest from out with our authority where we had a visit from Gillian Penny from Apple Education and also a visit from Education Scotland, when we were runner up in the Learning through Technology Education Scotland Award 2013/2014. I have also attended and presented at a few Teachmeet Tablet events held at the High School of Glasgow, where I learned and shared useful effective learning.

In order to find out how to use these devices, I have spent a large amount of time reading Twitter, blogs and different websites and books. This is an area of education I find interesting and I am confident in my ability to use technology to enhance learning. Previously, I spent a year working with different Primary and Secondary schools in the authority as a Glow Leader.

As a teacher, I have experimented with different ways to plan and evaluate using the iPad, however I still use pencil and paper largely. What has changed is that I use the Evernote app and a physical notebook which I can write/draw in and then take a photograph and it saves it in Evernote. I can then access my notes wherever I need

them and even search my notes where the app can recognise my handwriting. I tend to use this mainly for evaluations.

Parents' reactions were typical for any change or innovation in school: most thought that they would be great for learning and a few were sceptical. I have worked with the parents to explain their use and will try to give examples of use any time that they visit my class. We did hope to send the iPads home however, at the moment this is on hold.

OBSERVATIONS

Our setup of 1:1 iPads and learning, especially with respect to Maths, Spelling and Reading gives me and the students more time. Students are able to complete focused learning tasks in less time, allowing them to do more. I am able to save time collecting, marking, feeding back, tracking and monitoring learning allowing me to spend time on other tasks. iPads in classrooms first need a good deal of time invested to get this time back; we are now starting to reap the rewards for the effort that was put in last year.

Despite girls usually being the most academically proficient in my class, some of the boys are better at using the iPads, especially when problem solving.

Although it has taken a great deal of research and effort getting 1:1 iPad minis configured for my class, I have no doubt that we are using them effectively in our learning. A year or so down the line we are not usually distracted but rather they have found their place in the class as a great tool for learning. The pupils pick them up and use them to learn by sharing, giving feedback and completing work, usually without any fuss or hanging about. We can use them when we need to create, however I think this is a sideshow: iPads offer the user enormous potential although it's very easy to be distracted by that power. Teachers need to always come back to the impact on learning and what the intended learning actually is. Kids love to make animations and videos and podcasts and sounds and eBooks and pictures and mind maps but these can all just become like making posters. What is it that they are learning and is a poster that takes six hours to complete the best way to achieve that?

I have found iPads to be like any other resource in teaching: a new Maths scheme, IWB, sporting equipment or musical instruments. They will be used effectively by the class to learn so long as the teacher recognises the devices as a means to an end, invests time in them and then applies that to teaching sensibly. iPads thrown into a class where the Teacher has little knowledge or experience of them may be a waste of money and I would guess they will, if anything, become a distraction to pupils. If I ran a school, or education authority with the money to roll out iPads I would make them available to teachers with a solid grasp of the device's capabilities (by interview/assessment) and a sound education plan for how they are going to be used (not one that is emailed round staff and rehashed so that they can all have iPads). Devices would not be issued to the school but rather the teacher, so that if the teacher moves on, the iPads would be removed at the end of that session unless another teacher can step up interview/assess and renew the case for retaining the devices. iPads rolled out blindly across schools and education authorities will become like any other technology shift white elephant: Interactive White Board (IWB), laptops, computers etc.. To illustrate this I have previously replaced a teacher who never turned on the IWB. This teacher did a fine job, and I believe that I too am doing a fine job, however I use the IWB every day. The IWB does not make me a better teacher than the last but I think it saves me time, is a great way to display some excellent audio and video resources and the pupils have learned how to use it too. This example probably is not the only example. Our authority ran IWB training every term and session and even offered school and class visits. Despite this huge financial commitment the last teacher did not use technology. The IWB was installed in a classroom, at the cost of thousands of pounds, and never used. Schools rolling out iPads need to get the right teachers on board first and then spend the money, and make sure they are supported, otherwise they have the same potential as any technology that is not effectively used: a waste of money and another thing to worry about 'doing' for busy teachers. Dedicated and skilled technology savvy teachers should be available to support schools to lead change on this front on an ongoing basis. I am aware that this already occurs in many independent schools.

RECOMMENDATIONS

Here is a list of recommendations:

- Involve your ICT Service as much as possible prior to buying devices as their expertise is crucial when connecting to Wi-Fi and the Internet.
- Apple Configurator is OK for small projects but there is more powerful software and hardware for larger projects.
- When setting pupils up in new apps make sure you understand Data Protection.
- Video can take up a lot of time. Short videos and Explain Everything save time.
- iPad Teacher Guide has lots of examples.
- Google Drive is great for sharing pictures, documents and sound.
- Kid Blog is great for giving feedback.
- Apps like iXL and Spelling City save teachers time and give pupils instant feedback on focused work.
- In any given task, always question the use of an iPad, is it really the most efficient way to work and achieve the learning intention?
- iPads can be a great way to give additional support for learning.
- 1:1 ratio of iPads to pupils and teacher has many advantages compared to shared or part time use.
- Teachmeets are a good way to learn about effective use.
- It takes an interest, time and Twitter, Blogs, the Internet and books to learn about this relatively new and quickly evolving area of education.
- Configured carefully, iPads can save teachers and pupils time. To get this time however you must first invest a significant amount of time and effort to develop the knowledge, understanding, skills and then apply them to setup your class.
- If you have money to spend on devices, make them available to interested teachers with a grasp of how to apply devices in education and also with a sound education plan. Beware of those who put technology before learning.
- iPad projects in schools require ongoing support, ideally from teachers on hand or local, who understand both pedagogy and technology.

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