One-to-one Tablets in Secondary Schools: An Evaluation Study
Stage 1: 2011-2012

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Contents

Abstract 4
Key Words 4
Acknowledgements 4
Introduction 5
Research Background 5
Stage 1 Research: September 2011 – July 2012 6
Research Objectives 6

Management Summary 7

The Research Findings – Stage 1 13
Introduction 13

Chapter 1: The Adoption of One-to-One Tablet Devices 15
1.1 The decision making process 15
1.2 Trials 17
1.3 Funding 17
1.4 Support from Apple 18

Chapter 2: Challenges and Concerns 19
2.1 Teachers 19
2.2 Security and Damages 19
2.3 Potential for Distraction 20
2.4 Parents 20
2.5 Pupils 23

Chapter 3: Pedagogy 24
3.1 Changes to Pedagogy 24
  3.1.1 Tablets and Pedagogy at Honywood 24
  3.1.2 Tablets and Pedagogy at Longfield Academy 25
  3.1.3 Tablets and Pedagogy at Wallace High School 26
3.2 Teacher Training 26
  3.2.1 Honywood 27
  3.2.2 Alec Hunter 27
  3.2.3 Longfield Academy 28
  3.2.4 Wallace High School 28
3.3 Teacher Satisfaction with Tablet Teaching 29
3.4 The way in which the Tablet was used to teach 29
3.5 Innovative ways of teaching and learning 30
3.6 Collaborative Learning 31
3.7 Pupil and Parent Perception of Independent Learning 31
8.4 The benefits of touch screen technology
8.5 Benefits to children with SEN (special educational needs)

Chapter 9: Overall Attitude to the Introduction of One-to-One Tablet Learning:
The quantitative research
9.1 Teachers’ View
9.2 Parents’ and Pupils’ View

Chapter 10: The Global Picture of One-to-One Tablet Devices
10.1 The UK picture
10.2 Global Tablet trials

Chapter 11: Conclusions
11.1 Children’s’ perception of one-to-one Tablets
11.2 Parents’ perception of one-to-one Tablets
11.3 Teacher’s perception of one-to-one Tablets
11.4 The impact of Tablet learning and Tablet teaching

Chapter 12: Further Research
12.1 Research Plan September 2012 – 2013

Appendices
1. Research Methodology
2. Research Objectives
3. One-to-one Devices and Pedagogy: a literature review
4. Tablets for Schools
5. Family Kids and Youth

Figures
Figure 1 Support for Tablets in school: teachers
Figure 2 Benefits of using Tablets in teaching: teachers
Figure 3 Teachers’ current use of Tablets in school
Figure 4 Practical concerns about using Tablets for teaching and learning: teachers
Figure 5 The use of mobile phones in schools: teachers
Figure 6 Teachers’ attitude to using the internet and digital learning to enhance learning
Figure 7 Current use of digital technology to enhance teaching
Figure 8 Would you be in favour or against the idea of secondary schools in this country giving all children their own tablet computer?
Figure 9 Mixed parental views of one-to-one Tablets
Figure 10 Use of school funds and normalising the internet
Figure 11 Children’s view of one-tone Tablets
Abstract

The report summarises findings from an evaluation study that looked at the feasibility of giving pupils in secondary schools one-to-one tablets. Research was carried out between September 2011 and July 2012 and included a literature review, a review of global evaluation studies, and an evaluation of three secondary schools that had chosen to give pupils one-to-one tablets in September 2011. The three schools were in Belfast, Kent and Essex, with the main focus of the research on the Essex school, and included a nearby ‘control school’ that did not have one-to-one tablets, plus two feeder primary schools. Interviews with school leadership were carried out in all schools, plus observation of tablet learning in the three Tablet schools across a range of subjects. In addition eighteen focus groups were carried out with pupils, parents and teachers. Results suggest several benefits to learning including an increased motivation to learn; increased parental engagement; more efficient monitoring of progress between pupil and teacher; greater collaboration between teacher and pupil and between pupil and pupil. It appears that one-to-one Tablets offer a sense of inclusion that allow children, irrespective of socio-economic status or level of attainment, an opportunity to thrive through a new pedagogical model of pupil-led learning.

Key Words and Phrases

Tablets in education; One-to-one devices in schools; Tablets and Pedagogy; Tablets and the democratisation of education; Educational content; Educational apps; Teacher satisfaction with Tablet teaching; Pupil satisfaction with Tablet learning; Parental satisfaction with Tablets in schools; Independent learning; Collaborative learning; Motivation to learn.

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1 see http://www.tabletsforschools.co.uk/
Tablets for Schools

Introduction

Tablets for Schools is a CSR project set up in 2011 and led by Andrew Harrison, CEO at The Carphone Warehouse. It is argued that giving Tablets to children in school enhances learning, and promotes the ability to perform pupil led exploration and research. While there is little empirical evidence yet that looks at the use of Tablets to enhance pupil learning, there are many studies on the effectiveness of digital learning for children, and the benefits of, for example, educational video games that can hone critical-thinking skills and help teach academic curricula, while also evaluating what students learn (FAS, 2006)². A 2010 report from the European Commission concludes:

Despite the increase in the numbers of computers in schools, our survey shows that hands-on access for pupils remains limited. Allowing pupils to play with and explore new tools could enhance their motivation to think, understand, learn and conceptualise in creative ways.³

Many countries are trialling the use of Tablets in schools. Tablets for Schools believes that it is not if but when Tablets will be universally adopted as a learning device in schools. A recent report⁴ found that most US schools are testing Tablet devices. Emerging economies in Asia and Eastern Europe have also announced the adoption of Tablets in schools, including South Korea, India, Kazakhstan and Turkey. Trials have already begun to explore the benefits for children’s learning through the use of Tablets in France, Japan, Singapore and Australia.

Research Background

As Tablets become cheaper, and more manufacturers produce high quality and portable devices that can be used by pupils at school and at home, it is believed that it is important to monitor their use in school and find out the effects of that use. While several trials have run in schools in the UK in the past five or six years with one-to-one devices (such as notebooks and laptops), infrastructure, cost and maintenance, and lack of teacher training have appeared to be restrictive factors in their widespread adoption. Tablets, it seems, offer a faster, easier, cost effective and more manageable route to giving every child in secondary school access to the Internet at home and at school, and to the potential of providing the best educational content through each child having their own device.

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**Stage 1 Research: September 2011 – July 2012**

Since September 2011 Tablets for Schools has been carrying out a scoping study to explore the possibilities of Tablet learning for children. It appointed Family Kids and Youth (FK&Y) to help carry out this study. Three state-funded secondary schools were identified in the research that had introduced one-to-one Tablet learning (with iPads) in September 2011: Honywood Community Science Academy in Essex; Wallace High School, Belfast; and Longfield Academy, Kent. FK&Y’s research focused on Honywood School in Essex. It included a ‘control’ school in a similar catchment area, Alec Hunter Humanities College in Braintree, Essex, and two Primary Schools within the catchment area, St Peter’s Primary School and St Andrew’s Primary School, at which Year 6 (10-11 year old) pupils were interviewed as well as teachers and parents. In total 18 focus groups were held with pupils, teachers and parents. Observation and ethnography was carried out, looking at what teaching was like when Tablets were introduced into the classroom. Observation research was also carried out at Wallace High School, Belfast, and Longfield Academy, Kent. In the three Tablet using schools, in-depth interviews were held with the Head Teacher, Deputy Head, Head of IT, and at Honywood and Wallace High School the Heads of SEN.

A full report of the research results has now been prepared, and results of the research were presented to the Tablets for Schools team and stakeholders on 4 December, 2012. A further stage of research to include more schools and non-iPad schools is planned for this academic year (Stage 2). A full description of the research methodology is in Appendix 1, page 78.

**Research Objectives**

The overall research objectives for the research study were to find out whether the feasibility of providing Tablets to secondary school pupils in the UK can be justified in terms of pupil benefit, teacher benefit, pupil learning, potential risks including safety and security, cost, and acceptance by pupils, teachers and parents. The study also considered the impact of Tablet use in other countries on UK learning and pupil progress. The full research objectives can be found in Appendix 2, page 81.
Management Summary

Decision Making

- The decision to adopt Tablets in the three secondary schools that were the focus of the research 2011-2012 was driven by several factors, but there were three overall drivers that were shared by each school. First was a wish to change pedagogy in terms of the way pupils learn and teachers teach. Second was a shared sense of the importance, for pupils, teachers and the school, to keep up to date with new technology and new and innovative digital devices. The third and perhaps most significant factor was recognition of the importance of providing each pupil with their own one-to-one device, and a shared belief that this would enhance learning and give equal opportunity to every child in the school.
- The three tablet schools in the research had been helped in their decision making by looking at what other schools were doing, especially schools in Scandinavia and in the US, although Head Teachers expressed a concern that there was little robust supporting evidence to show the advantages of Tablet learning or one-to-one devices.
- It should be emphasised that the three Head Teachers and their colleagues were (and are) noticeably energetic and innovative in their approach to pedagogy and technology; this pioneering spirit was reflected in their decision to adopt one-to-one Tablet devices which at the time were new, untested and innovative.
- School leaders at each school were keen to emphasise that they considered several devices before adopting iPads, and all emphasised that they were not necessarily committed completely to Apple, but that at the time of their decision making (Spring, 2011) Apple, and the iPad, offered the ideal solution; with this came high levels of support from Apple.
- All had considered smart phones as most pupils in the school had these devices anyway. However the discrepancy in the type and format of the individual smart phone would challenge the common wish to give every child an equal opportunity to access the Internet. The iPod Touch (adopted by Essa Academy, Bolton in 2009) was also considered, but there were limitations to what these devices offered and the screen was considered to be too small.
- The timing of the launch of iPad2 and its features, especially the camera and film capability, made the decision to adopt the iPad easier. This decision was also influenced by the widespread belief that it was important to adopt the same device for all pupils.

Misgivings and the Process of Change

- There was some apprehension expressed by teachers and parents prior to adoption. A real concern was that pupils’ safety would be compromised and that pupils might be vulnerable to theft from transporting such a valuable and highly sought after device. There was also concern that pupils might lose and mislay the device. In fact neither of these concerns were realised in any of the schools.
- Pupils were careful not to lose their device, and it was noticeable that each child in each school took great pride in it; they personalised the device by purchasing individual covers, and each had a personalised screen saver. This also helped to distinguish to whom each
device belonged, and so minimised loss. It should be noted that pupils were particularly delighted to receive iPads which were seen as ‘state-of-the-art’ and highly covetable.

- Some teachers, perhaps understandably, were concerned that teaching with Tablets would challenge their teaching style, and would create a sense of chaos and disruption. This was helped greatly if teachers were able to familiarise themselves with the device before term started, and those teachers who had already purchased a device for their personal use were less apprehensive.

- Teacher training and support was seen to be paramount to this process, and support and teacher training from Apple’s Distinguished Educators (ADE’s) had been invaluable, as was ongoing support internally from the school’s ICT department. Wallace High School and Longfield Academy in particular had run several training sessions for teachers before the summer holidays in 2011, and teachers had taken their devices home to use over the holidays.

- At all schools this process of familiarisation and discovery appeared to enhance teaching style and the ability to use the Tablet in an innovative and creative way. Teachers were also helped by pupil engagement, and at each school teachers admitted that they learnt from pupils on all aspects of the Tablet – apps, shortcuts, storage, information – and expressed some amazement at how quickly children learnt to use and utilise the Tablet.

**Funding**

- Schools took two main routes to funding Tablets. Longfield Academy and Wallace High School leased the devices to parents for a monthly fee (£16 and £15 respectively, including insurance) and gave each teacher a Tablet. Help was given to those families who struggled to pay this amount monthly (especially a problem if parents had two or three children in the school). Honywood Community Science School gave Tablets to all pupils free of charge, but did not give teachers a Tablet (many purchased a Tablet, or had already purchased one for their personal use).

- Honywood’s leasing agreement cost of £133,000 per annum over three years. The Head describes this as similar to a ‘balloon payment’ for cars. The iPads will go back to be resold after three years, and this cost includes the insurance product which is £47,000 over three years. After 3 years the school will purchase a new device and will aim to once again supply a market leading product to its pupils. The school had wanted to do this on a two year lease, realising that the devices could be obsolete within three years, but this was too expensive. Around 30% of the community made a contribution towards the insurance product and that has amounted to about 25% of the insurance cost. One of the main upfront costs for the school had been to install the highest bandwidth of broadband at a cost of £85,000.

**The Process of Integrating Tablets in the Schools**

- The adoption of Tablets was not necessarily an easy process for the schools, and it was the drive and determination of the school leaders that appeared to facilitate the change.
• Initial challenges to schools included technology infrastructure. Each school had to ensure that there would be appropriate bandwidth to cope with the demands of several hundred Tablets accessing the internet at the same time, and had made considerable investment to meet this demand.
• Each school admitted to not being entirely sure it would work, and expressed their sense of relief when at the critical point all pupils in the school were first using the devices, nothing had crashed. Clearly back up and support to the schools on infrastructure is paramount here.
• While teachers and parents had expressed concern about safety and potential theft of the devices, what had been overlooked was the fragility of the device and potential for breakages. Children invariably dropped the iPad and breakages were quite high (around 5-7%).
• This breakage level decreased as children learnt to respect the fragility of the device, but continued to be a problem throughout the year. Each school was looking into the possibility of having a repair centre close at hand, possibly within the school. Schools were also considering issuing much stronger covers for the Tablet, which were more likely to protect the device. Insurance and repair, and covers are therefore important considerations.

The Impact of Tablets in the Three Schools – Pupil-led Learning and Motivation to Learn

• At Honywood a prior decision to focus on independent learning was facilitated by the Tablet, and indeed this had been one of the drivers for the adoption of the device.
• At Wallace High School and Longfield Academy teaching frameworks were developed to encourage Tablets to be used in lessons.
• In all three schools an increase in pupil-led learning was perceived by teachers to be a major benefit of one-to-one Tablets in schools.
• This was supported by increased pupil-teacher communication via e-mail. Work could be marked and returned soon after a lesson, so that learning was more immediate, and pupils felt supported as individuals, with any misunderstanding or difficulties in schoolwork identified far sooner than in the prior to the use of Tablets, when feedback took several days to reach pupils.
• Teachers appeared to appreciate the immediacy of marking; it helped them to make informed judgements about pupils’ understanding and learning, and it assisted in monitoring individual pupil’s progress.
• The schools reported genuine excitement over the introduction of Tablets which in their opinion had led to increased motivation to learn. Pupils were reported to be more creative, independent and engaged with their schoolwork.

Collaborative Learning

• Increased collaboration between pupils was evident through applications such as Facetime. There were some differences between the year groups, and teachers noted that Year 7 pupils appeared to have adapted best to the change in teaching style that Tablets had prompted.
Teachers were positive about the use of Tablets in teaching and learning, and many had integrated the device into their teaching in innovative ways. Due to a lack of educational content the teachers were often prompted to devise creative ways of using the Tablet in lessons.

Such collaboration led to the sharing of ideas and apps, and all schools had a means of communicating appropriate content, or apps, or ways the devices could be utilised (e.g. using the device for recording, film and photographs). For one school this was through the school intranet, another had a newsletter, and all had a common place where ‘App of the Week’ for each subject could be displayed. In all three schools pupils were contributing in positive ways to this process, often discovering suitable content or apps before teachers were aware of them. It was also common to all schools that teachers were beginning to develop their own apps.

What Facilitated Successful Adoption of Tablets into Schools

- It is difficult to isolate the role of the brand (iPad) in the pupils’ response to the Tablets. While some parents felt the ‘iPad factor’ was bound to have an effect, teachers argued that the novelty for most pupils had worn off and that pupils were now engaging with the device as a learning resource.
- It appears that involving parents effectively in the planning stage, and providing training and information, are essential to ensure parental engagement and acceptance. While parents initially had misgivings about Tablets, it helped a great deal if they were given training and support, and reassurances about safety and security. An unexpected but welcome advantage of this process reported by schools was that parents not normally engaged in school activities were keen to attend meetings about the Tablet. The Tablet appeared to offer a connection between school and parents that had not previously existed.
- Clearly teacher engagement was also essential, but it appeared that most teachers were enthusiastic about the new pedagogical model that one-to-one Tablet teaching offered, and as they began to understand the full potential of the Tablet through the year, their enthusiasm increased.

Satisfaction with the Introduction and Use of Tablets in Schools

- Pupils in focus groups expressed greater motivation and interest in their schoolwork, but did not point to the specific brand as playing a role in this. They expressed satisfaction and took pleasure in the interactive nature of Tablets, and the change in lesson and learning styles.
- Pupils were motivated by having a variety of ways in which to learn and present their work, which was facilitated by the Tablet.
- School leadership as well as teachers felt that as well as greater parental engagement, the introduction of Tablets had led to increased parental satisfaction with the school. Many parents were impressed with the direction the schools were taking, and as the devices were highly visible at home as well as in school most parents were aware of how they were used, and of their benefits.
Parents in focus groups expressed varying degrees of knowledge of, and confidence in, using technology, and this influenced their initial responses to the introduction of Tablets. All three schools therefore had open discussions and information meetings for parents to address their concerns and show them how the Tablets would be used within the school context.

**Perceived Concerns about the Introduction of One-to-One Tablet Learning**

- Costs and security are likely to be concerns for parents causing resistance to the notion of the introduction of Tablets into schools. These issues were voiced by parents in focus groups at the control school (with no Tablets), and parents of children using Tablets admitted to having had these concerns at the early stages of introduction.
- Some parents of Tablet users expressed concern that children never ‘switched off’. While this is a widely held concern held by parents about their child’s interaction with digital technology (Digital Kids and Youth, 2012), it may be that a Tablet provided by the school appears to sanction its use at all times. It seems that parents should be encouraged by schools to impose limitations on their child’s Tablet use at home, for example, not taking them to their bedrooms at bedtime, and limiting the time spent online at home.
- There is concern expressed by non-users about costs. The survey ‘Digital Kids and Youth’ conducted by Family Kids and Youth showed that although a nationally representative sample of parents is largely in favour of introducing Tablets into secondary schools, a significant number do express concerns about the overall costs to schools.
- The lack of appropriate educational content was a challenge to teachers at the three schools, and the schools requested a larger investment by educational publishers and content providers in innovative and compelling interactive educational content. Several teachers across the three schools had begun to create their own content, such as interactive iBooks.

**The Perceived Benefits of One-to-One Tablet Learning**

- Both at home and in school pupils were experiencing the benefits of a device that was personal and portable. At home, where many had previously had to share devices that gave them access to the Internet, children now had constant access to school resources, communication, including interaction with teachers and peers, and entertainment.
- At school pupils enjoyed the freedom of a personal device which meant they could do research at any given time. For teachers this meant not having to book resources in advance. Tablets were widely seen as being at the cutting-edge of technology and both parents and teachers appreciated the schools’ efforts to invest in young people’s futures. This was perceived as giving pupils an advantage in their future academic studies or professional career.
- Touch screen technology was seen as especially beneficial due to its size and weight, its portability, with an interface that was easy to understand as well as intuitive to use, as well as lowered cost compared to PCs.
Pupils with special educational needs (SEN) were also experiencing the benefits of using the Tablet in their learning. Due to the simplicity and intuitive nature of the touch screen interface these children were able to access their learning in a variety of ways, as well as accessing applications commonly used with children with learning difficulties. Many also found the ability to communicate via e-mail helpful. Teachers reported that being able to use the same device as their peers led to feelings of pride and increased self-worth amongst these children.

The Digital Kids and Youth survey carried out across the UK with a nationally representative sample of over 1,000 parents, 900 children, and 200 teachers (FK&Y, July 2012) shows enthusiasm for the adoption of one-to-one Tablets in schools.

The survey shows that teachers were overall in favour of introducing one-to-one Tablets into secondary schools, and believe that the device could improve pupils learning as well as increase motivation. Teacher support remains important, however, and 72% of teachers would like more training in how to use digital technology in their teaching.
The Research Findings – Stage 1

Introduction

The integrated nature, touch screen interface, portability and, increasingly, the lower cost of Tablets have made them popular as consumer products, but now such devices are also having an impact in the educational sector.

Although the popularity of Tablet devices within education appears to be growing rapidly, and indeed large scale Tablet trials in schools are currently being run globally (see Chapter 10, page 69), there is little empirical research that considers the potential benefits and drawbacks of Tablets to children in schools. To explore benefits and drawbacks, Family Kids and Youth was commissioned by Tablets for Schools to consider the notion of giving each child in secondary school a Tablet device. Family Kids and Youth identified three State secondary schools in the UK that had adopted one-to-one Tablets in September 2011. Research was undertaken during the academic year 2011 – 2012 to explore the experience of school leadership teams, teachers, parents and pupils, and to observe the use of Tablets in schools. This was accompanied by a literature search that examined published research that had looked at one-to-one Tablets in schools, and a search of the global picture of one-to-one Tablet adoption in education.

The three schools identified that had given each child a Tablet device were Honywood Community Science School in Essex, Longfield Academy in Kent and Wallace High School in Belfast, Northern Ireland. This report is based on interviews, group discussions and observation of the device use in class. It should be acknowledged that while these are three different schools each with their own leadership style and approach to learning, we have drawn upon common experiences and summarise these in the following chapters.

Honywood Community Science School in Coggeshall, Essex was the main focus of the research and by way of contrast we also recruited a school in the same area that had not given each child a Tablet, Alec Hunter Humanities College, Braintree, Essex. At both schools focus groups were held with pupils, teachers and parents. The focus groups at Honywood were followed up by in-depth interviews with teachers and pupils, and class observations to ensure a robust review of Tablet use. Focus groups were also carried out with teachers, pupils and parents in Year 6 at two of the feeder Primary schools to Honywood: St Peter’s Primary School, Coggeshall, and St Andrew’s Primary School, Marks Tey.

At Longfield Academy, Longfield, near Dartford, Kent, and Wallace High School, Lisburn, Belfast, in-depth interviews were held with Head Teachers and deputy Head Teachers. At Wallace High School we also interviewed the Heads of Department of SEN and ICT. At both schools researchers were able to observe the use of Tablets in class.

In addition to the qualitative research, this review draws upon Family Kids and Youth’s tracking survey ‘Digital Kids and Youth’ which amongst other topics asked 1120 parents, 933 children and 202 teachers about their use of and attitudes towards digital technology in general, and in particular the attitudes towards and the use of Tablets in school (for a full summary of methodology see page 78).
The main objective of this report is to assess the impact of the use of one-to-one Tablets in secondary education. The first chapter is a literature review that looks at the adoption of one-to-one devices in school. The next chapter considers the process the schools went through before adopting one-to-one Tablets (specifically iPad 2s) including infrastructure, financing and support. The third chapter looks at challenges and concerns both before adoption and since. The fourth chapter considers the ways in which the introduction of Tablets has influenced pedagogy across the three schools, and what parents, teachers and pupils feel about this. The following chapter looks specifically at Tablet learning and teaching at Honywood. The sixth chapter assesses content and the way existing content is used in schools. Chapter seven assesses the argument that Tablets can contribute towards increasing pupils’ motivation to learn, based on feedback from teachers, parents and pupils. This chapter also briefly discusses the role of the specific brand of Tablet, the iPad, in this process. Chapter eight discusses the role of parents and their involvement in the Tablet schemes, as well as the schools’ strategies for informing and engaging with parents through the implementation of these major changes across the school. The report next considers other benefits of the introduction of the Tablet device in school, and the following chapter looks at the results of a nationally UK representative sample of parents, teachers and pupils and their response to the notion of one-to-one Tablets in secondary school. The penultimate chapter reviews the global picture and the development in recent years of introducing one-to-one Tablet devices. The final chapter looks at next steps and the outline of Stage 2 of the research that will lead to an evidence-based paper to be published in September 2013 and the recommendations of the Tablets for Schools campaign.


Chapter 1: The Adoption of One-to-One Tablet Devices

The decision to introduce Tablets in schools was driven by a combination of factors. The leadership style and pedagogical philosophy of a belief in new ways of teaching and learning at each school was central to the decision making process. Also of importance was the role technology already played in the lives of pupils at home and in school. Notably the three schools had strategies in place to support parents and to answer their concerns regarding the introduction of Tablets.

This section looks at the individual school’s rationale for introducing Tablets, how Tablets were adopted, the perceived challenges schools expected to face, financing, and the availability of help and support. The accounts of school heads and senior staff, teachers, parents and pupils are drawn upon in order to give a detailed account of how the decision making process was carried out, and how Tablets were introduced to the school.

1.1 The decision making process

The three schools had different reasons for adopting Tablets. A desire to change pedagogy and to improve access to technology were however common themes across the schools.

At Honywood Community Science School the headmaster’s search for a device which would enable pupils to work independently and become less reliant on their teachers led to the school adopting a one-to-one Tablet scheme in September 2011:

*When I came here in 2002 the school was very, very different from how it is now and learning was much more passive. There was very little interactivity let alone activity in learning and it was a different place completely but the journey was always going to be to where we are now. And around about 2005 I started asking for people working in this area to find this device ... I had people going out to things like the BETT show ...slowly but surely things started to happen and then obviously the (smart) phone thing took off. This happens all so quickly, doesn’t it?...*

– Head Teacher, Honywood Community Science School

Mobile phones, already owned by many pupils, were considered during this process. On reflection the issue of equality of devices, and access, drove the decision to give each pupil a new Tablet device:

*There’s always going to be somebody with the latest iPhone 4 and somebody else is using a flip phone from 1999 or something and that’s not what we want. We don’t want that unfairness*

- Head Teacher, Honywood Community Science School

The availability of the iPad played a part in Honywood’s decision to start its trial, and as will be discussed later in this section, which Tablet to use.

At Longfield Academy iPad 2s were introduced at the same time as the opening of the new school building in September 2011. Longfield had taken a long-term route towards technology in the school and wished to avoid the model of PC suites and the large investments associated with this. By
considering the future of technology in the school, and bringing on board advisors from IT consultancy 9ine, Longfield’s decision to adopt Tablets was driven by a pragmatic design consideration as well as the advice they received:

Four years ago we had the opportunity to build this brand new building and one of the things that was decided by the strategic leadership team, of which I was one, was that we wouldn’t have as many PCs in the building. At this time, we didn’t know what operating system we would use but we knew we wanted one to one devices. We conducted a trial with 30 Year 11 pupils. 10 were issued notebooks, 10 were issued with laptops and 10 were issued with iPads. The new iPads had just come out and they were a runaway success...

- Principal, Matisse College, Longfield Academy

Following the trial it became evident to Longfield’s leadership team that Tablets were the way forward. The introduction of iPads conferred a ‘cool’ factor which appeared to make the devices irresistible for pupils, and this is explored more fully in subsequent chapters.

One student who was allocated a laptop wouldn’t even come and collect it. Many of the pupils were so miffed they didn’t get the iPad and it was very, very clear from the feedback that anything you can do on a PC, you could do on an iPad, more or less, and there was far more engagement and fun and extras that the iPad brought and because it was new and you were engaging on a level with students that was their territory, you started to become cool.

- Principal, Matisse College, Longfield Academy

Wallace High School in Belfast chose Tablets for several other reasons; its decision to adopt Tablets was driven by a combination of parental enquiry around portable devices in school, as well as the school’s own strong support for an up-to-date technology environment. As with the other schools, Wallace High School also wished to find a device which could be given to all pupils equally, rather than each pupil or family going their own way:

...there were just, year on year, more and more requests from parents and then we had increasing requests from students, could they bring their devices into school and support them on the school network...it was very hard to find a uniform approach and how do we integrate this into the learning...so that was really the motivation - came from the student demand which was their parents questioning about things and we didn’t feel that we should be saying, well, yes, you should buy that computer or, no, you shouldn’t. What we thought we would do was then try and find a device which we would say to parents we’d be happy if everyone had this and we tried to look at a cost effective way of doing that.   - Principal, Wallace High School, Belfast

Significantly, the introduction of Tablets was thought by schools to be both cost saving, the devices are cheaper than older desktop PCs, and also had the potential for space-saving because no dedicated space would be needed for them.
1.2 Trials

The schools ran a small number of Tablet trials before deciding to adopt them. Due to the recent development of Tablets as a product, and the significant role of Apple in driving this development, the iPad 2 emerged as a major player in trials. The familiarity of Apple’s Tablet following the trials, the lack of significant alternatives at the time of trials ending, and the support from both students and teachers (many had seen or owned Apple Tablets at home) strengthened the case for choosing iPads.

In addition to the popularity of their product, Apple was proactive in providing support throughout the implementation process (see 1.4 page 18). Head Teachers were clear, however, that they were not committed to one company or device indefinitely. Longfield Academy did additionally choose to upgrade their existing infrastructure to Mac computers which supports their introduction of Apple’s Tablet. The ready-to-use proposition of Apple iPads, including the iTunes Appstore, and its support system, as well as applications such as the digital camera enabling video calls and media production, suited the needs of these schools well. Wallace High School reflected this process:

...we did look at lots of different Tablets but the Tablet market has changed quite significantly, even from September to now, but I think things like battery life and apps that were available [for the iPad]...we feel [if] there’s a better Tablet around, we’ll just change, so we didn’t feel we were tying ourselves into Apple and I’m very keen not to do so.

Principal, Wallace High School

1.3 Funding

Methods of funding the introduction of Tablets varied between schools. The main differences centred on parental contributions. At Honywood Tablets were provided to the school on a three year leasing contract, and given to the pupils free of charge. Honywood’s Academy status (September 2011) played a part in the way the school reorganised its budget to pay for Tablet leasing. In an effort to be inclusive Honywood also prioritised the use of free apps for the school; this was done to reduce the financial burden on parents to fund Tablets. Whilst parents were not asked to pay, they were encouraged to contribute towards insurance for the devices, which helped the school reduce overall costs. Honywood’s leasing agreement had been done at a cost of £133,000 per annum over 3 years. The Head describes this as similar to a ‘balloon payment’ for cars. The iPads will go back to be resold after three years, and this cost includes the insurance product which is £47,000 over three years. After three years the school will purchase a new device that is the market leader at that time to enable pupils to continue with one-to-one devices. The school had wanted to do this on a two year lease, realising that the devices could be obsolete within three years, but this was too expensive. Around 30% of the community made a contribution towards the insurance product and that has amounted to about 25% of the insurance cost. One of the main upfront costs for the school had been to install the highest bandwidth of broadband at a cost of £85,000.

At Longfield Academy a leasing scheme was put in place. The school had purchased the Tablets and leased them to parents for a monthly fee of £16 including insurance. The leasing scheme was also flexible enough to include support for those families who could not afford the full fees. Under this
flexible scheme, parents were asked to contribute what they could as regularly as possible. Longfield Academy worked with the charity E-learning Foundation to organise the financing and parents’ payments.

Wallace High School in Belfast had also signed a three year leasing period and leased the devices to parents for a monthly fee of £15 including insurance. Like Longfield Academy, parents of children on free school meals were not asked to pay. Wallace High School organised the financing and leasing without help from other organisations.

At Honywood all pupils were given a Tablet, which meant that every single pupil had them. Teachers were not given Tablets, but those who wished to purchase one were offered discounts. At Longfield Academy and Wallace High School parents were given the choice to pay, which meant that not all pupils had them. The schools said that they tackled this by providing extra Tablets in lessons. At Longfield Academy 75-80% of pupils had a Tablet, and at Wallace High School as many as 98% of pupils had a Tablet.

An important point to make is that the schools adopting the parental leasing model argued that this appeared to increase parental engagement with the trial, and this will be further discussed in Chapter 7, page 51.

1.4 Support from Apple

Apple, as the manufacturer of choice across all three schools, played a significant role in supporting the introduction of the Tablets, however the extent of this depended on the school. Honywood did not have a wider Apple infrastructure, and had made a decision not to give Tablets to teachers and did not therefore provide teachers with training. Apple did, however, help Honywood explore how to best make use of the Tablet:

_We talked to Apple about the lifespan of the device and the upgrades that they’ll be doing within that, both on the model and the operating system...we didn’t expect that we’d want a child to have the same device for five years because there’s going to be new devices in that time, so we’ve got refresh built in...Apple were very good working with us on that and the suppliers._

— Deputy Head Teacher, Honywood Community Science School

At Longfield Academy, and Wallace High School, Apple played a more central role through teacher training, and parental support sessions. One factor in Longfield’s use of Apple support was the closeness of a major Apple store. This enabled the arrangement of training days and the school noted the usefulness of training provided to groups of staff. Teachers felt generally happy with the direct support from Apple. While there was a note of caution expressed by the schools’ leadership about reliance on Apple devices, satisfaction was expressed about the provision of professional training from Apple’s Distinguished Educators (ADE’s).
Chapter 2: Challenges and Concerns

This chapter discusses the perceived concerns held by teachers, parents and pupils before the introduction of the Tablet, and those concerns that remained after its introduction. Teachers felt some disquiet beforehand about classroom management and the ability of the school’s infrastructure to handle the large amount of devices. Parents felt that Tablets could present a challenge to traditional forms of learning, (significantly this was also a concern expressed by parents at Alec Hunter where Tablets had not been introduced widely across the school). There were also fears expressed about the social impact on children of having Tablets at school and home, and while pupils were mostly in favour of Tablets, they also had some concerns about the distractions they might bring.

2.1 Teachers

Teachers’ concerns focused on connection issues, breakages, classroom distractions, and parental concerns. The introduction of Tablets at Honywood was supported by investment in a wireless infrastructure as well as spending extra to ‘future-proof’ the school for potential new developments. Nevertheless as the Deputy Head of Honywood expressed, there was still some anxiety on the first day about the reliability of the Wi-Fi network:

*It was when we hit learning session four on the first afternoon and they’ve all got it, the Wi-Fi was going to fall over and none of it’s going to work and I’m just going to look ..., but it didn’t, it’s been, it has been really good.*  
Deputy Head Teacher, Honywood Community Science School

2.2 Security and damages

A common concern among both teachers and parents was the fragility of the Tablet and their potential attractiveness to thieves. The portability of the devices meant that they were often used or carried in public, such as to and from school. Each of the schools had similar totals of breakages once the Tablets were introduced, ranging between 5-8%.

There was also the issue of how broken devices could be replaced; insurance played a key role. Whilst insurance could supply a new or repaired device, there were implications if certain individuals broke more than one or two devices. At Longfield, for example, some pupils had broken several iPads and the school had begun to offer reconditioned and not new iPads as a replacement. At Honywood pupils had to manage without a device while theirs was repaired, serving as a deterrent to future breakages. Both approaches to breakages demonstrated to pupils the need for responsibility. Schools insisted on protective cases being used with the Tablet, and it became increasingly apparent that these needed to be robust.
In terms of wider concerns around security, many of these fears were not borne out. The fact that Tablets were available for each pupil, and pupils’ generally high level of responsibility, appeared to contribute to the fact that Tablets were not lost or stolen:

...we very much felt that it was a bit like when mobile phones first came onto the scene, people were worried they were going to get stolen but actually once everybody’s got a mobile phone this worry reduces, so in school we weren’t so concerned.

- Vice Principal, Matisse College, Longfield Academy

2.3 The potential for distraction

Teachers were aware of the potential for distraction in lessons and these concerns were tied in with issues around access to certain websites in particular, such as gaming sites and social networking sites. At Wallace High School teachers had decided to try to embrace the existence of social media, creating a time and place for it, rather than banning it outright:

I listen and I learn from and I try to pick up what the young people are saying and a lot of our staff are regular users, we have a Twitter account here, we have Facebook, we have had for years but I value that it can be positive, but I think individual schools now need to find a way to make it positive...

- Principal, Wallace High School

Within lessons awareness of the features of iPads helped teachers determine if pupils were felt to be wasting lesson time:

...if you double press the home button, you can see the last app students were on. There were some concerns about Facebook but it’s not so much Facebook that we have to constantly monitor, it’s the messaging and Facetime and things like that.

- Vice Principal, Matisse College, Longfield Academy

2.4 Parents

Teachers were well placed to address parental fears about the introduction of Tablets (see Chapter 7, page 51). Ultimately most parents’ fears and possible resistance were eroded through a combination of parental engagement evenings and their children’s enthusiasm. However it was still the case that a small number of parents in each school remained unwilling to engage with Tablets on some level; this might mean not allowing the devices at home, or restricting them in some way.

Focus groups with parents at the control school, Alec Hunter, at which Tablets had not been widely introduced, and Honywood, at which they had, revealed initial concerns about the introduction of Tablets. At Alec Hunter parents were generally more sceptical of what they saw as an over-dependence on technology. Parents at Honywood reported that the Tablet had mostly been received positively, and the fears expressed by the Alec Hunter parents were not realised.

The notion that technology was either a support, or indeed secondary, to other ways of learning, was a common theme amongst the parents at Alec Hunter. Parents who had not experienced Tablet
learning had, perhaps understandably, a greater tendency to believe that a ‘traditional’ form of learning should be the mainstay of teaching.

I’ll say you just can’t take a Wikipedia answer and that’s your homework. You can look at that but you also need to look here, look at this, gather the information and then produce your work from it. Don’t go copy, paste... - Mother, Alec Hunter

Safety also remained a key concern amongst these participants. Parents did not always trust that young people were responsible in their use of the internet; social networking especially was a concern and parents felt that this could potentially lead them to danger. Added to this was a sense from some parents of disempowerment caused by their own lack of understanding of digital technology, and the pace of change that young people seemed well adjusted to:

As adults we still don’t know enough about it. Our children learn at a quicker rate than we do with the technology so they could be accessing all of this without us even knowing it...not even most adults I’ve spoken to know that there’s about 50 different permissions on Facebook to see how much access you give someone to look at your account. I get quite passionate about it. You need to be aware. - Father, Alec Hunter

When prompted about the hypothetical introduction of Tablets in schools parents could see some advantages also. In particular it was recognised that everything would be in one place, and less emphasis would therefore be placed on heavy books. On the other hand worries over technology and constant internet access re-emerged:

I think homework that should take 3 hours will suddenly take 10 minutes...in a negative way. - Mother, Alec Hunter

But if it then becomes like a homework tool, it takes away some of the social skills of the kids because they no longer need to talk to their mates anymore. - Mother, Alec Hunter

My concern is that the next Rembrandt doesn’t appear and the next Mozart doesn’t come about. - Father, Alec Hunter

Another concern was how such schemes would be financed:

I think it’s potentially putting too much emphasis on parents – particularly in the middle of a recession, that we cannot indulge or afford...not everybody’s going to be able to help pay for something like that. - Father, Alec Hunter

These things aren’t cheap...if the school suddenly loses a large proportion of the budget repairing, replacing, providing... - Mother, Alec Hunter

While parents at Honywood also recalled having similar fears and concerns at first, the experience of their child’s iPad learning for two terms had altered their view. These parents emphasised the positive aspects of Tablets in the school. Importantly the Tablets were seen as part of the school’s wider approach to learning, and parents were largely in support of this. One parent suggested that other parents did not always understand the advantages of Tablets, and only based their concerns on what they had experienced outside the school experience:
Quite a few of my friends are ‘anti’ the iPad. They have the issues with Facebook, etc. But they don’t know how the iPads are for the children at school – they are not aware of what a fantastic tool it is for them. So all they see is the negative side for them at home. - Mother, Honywood

Although some parents did express concern about how the device was used at home, all agreed that it was a positive support for school work and communication:

*If my son doesn’t understand homework, he can message a group of friends or email a teacher... and that has helped him more because he’s not sitting at home thinking ‘I can’t do my homework, I’m going to get told off’. So he’s a bit more relaxed.* - Father, Honywood

In contrast to parents’ initial fears about potential breakages, Honywood parents had observed that children could be responsible with such expensive and fragile devices, and that children appreciated this responsibility:

*It’s not just about the lessons and the learning. I think it’s the whole environment from [daughter’s] point of view...that she’s totally enamoured with - the responsibility.* - Mother, Honywood

While Honywood parents’ experience demonstrates that fears about technology in schools, learning and safety could be dealt with effectively, some parents nevertheless still expressed concerns about how the device was used at home. Several parents felt that this had an effect on their relationship with their children, and felt a lack of control over the situation:

*We have to limit him to how much time he has a day on it because he’ll go into his bedroom and stay in there all evening if we allow him to...I will take the iPad away from him...he’ll have 2 hours if he’s done all his homework. But by taking it away, he feels I’m disciplining him so our relationship I think has worsened because of it...as soon as he’s off his iPad he’ll go on his Xbox...so I don’t think it’s specifically a problem with the iPad...he’d be like that with anything.* - Mother, Honywood

Parents’ view at the control school Alec Hunter (with no Tablets), and Honywood (with Tablets) differed somewhat. Many of the concerns raised by parents of pupils at the control school were understandably based on their own experience of children using technology at home, including fears about the use of Internet. Honywood parents’ experience of Tablet devices in school show that, with the right support, many of the initial fears that parents had experienced either did not materialise, or could be managed. Examples include the way in which the internet was shown to be useful for learning, and teachers remaining aware of the potential for distraction. The use of covers for their iPads to prevent damage, and the reliance on Tablets in lessons, helped pupils to have a vested interest in keeping them safe. Finally, as will be explored in the next chapter, it appears that Tablets have benefits for learning.
2.5 Pupils

Pupils at Honywood found that the Tablets were a positive influence on their learning, and were enthusiastic about the use of the Tablet for communication and entertainment outside school. While one girl suggested that Tablets might be a distracting element in the classroom, most pupils felt that the classroom environment had improved since the introduction of the device:

*Someone’s always getting told off for doing the wrong thing on their iPad because ...more people use it for games and stuff and using it when they’re not supposed...and it makes it less easy to learn while you have all these people making lots of noise, sent out of lessons, listening to music and having it turned up really loud. It disrupts it all.*  
- Year 9 Girl Honywood Community Science School

*People who aren’t paying attention in lessons now and are playing games on iPads probably wouldn’t have been paying attention before anyway...they’d probably have been making more noise because they were not so distracted by playing a game where you’re more involved, you’re concentrating on the iPad so you’re not like shouting around the class because you’re being quiet while you’re on your iPad.*  
- Year 9 Boy, Honywood Community Science School
Chapter 3: Pedagogy

The introduction of Tablets in the three Tablet schools in our research has had a noticeable effect on pedagogy. The influence of Tablets relates to the way in which they have been included in the schools’ broader pedagogical approach, as well as the way in which teachers and pupils have adopted the devices. This chapter summarises some of the effects of Tablet learning and teaching on pedagogy. In Appendix 3, page 83, we review the literature on one-to-one devices and pedagogy.

3.1 Changes to pedagogy

There were notable changes reported by the schools. Honywood, for example, was using Tablets extensively, but the school was keen to emphasise that the device was only one element of its approach to teaching and learning. At Wallace High School Tablets were seen as part of the school’s philosophy of widening the use of ICT. Longfield viewed the Tablet as part of its strategy for allowing children one-to-one devices. Similarities emerge therefore across the three schools - Honywood, Longfield and Wallace High School - in relation to a change in pedagogy. Across the schools Tablets were viewed as enabling pupils greater freedom to learn independently and there was a collective recognition that the device would allow more collaboration and group work, as well as improved teacher-pupil communication.

3.1.1 Tablets and pedagogy at Honywood

As noted in the first chapter, Tablets were introduced at Honywood as part of the leadership’s vision for a new learning approach which focused on pupil-led learning and an acknowledgment that digital technology was part of pupils’ world:

...one of the things I think we’ve got to realise is that young people are going to learn in ways that are going to be different from what we were able to do when we were at school. They’re going to become far more capable of multitasking...And these guys, they’re going to be able to do it even better than we can, way, way better than we can, because they’ve learned to do it from being eleven, or even younger ...

- Head Teacher, Honywood Community Science School

It is evident that the teaching staff is enthusiastic about this approach to learning and to teaching. The days of a teacher lecturing to a room of pupils does not fit with the opportunities that Tablet learning offers:

The school is more about the individual learner, deciding on that day how they want to learn, moving [them] onto a point where you are always inquisitive, always pushing yourself... we’re not teaching, we’re facilitating. We’re in the room with them; we’re part of that journey, we’re part of that mastery of their skills.

- Teacher, Honywood Community Science School

There would be no point in dumping a lorry-load of iPads in a school where they haven’t got that mantra, that way of thinking.

- Teacher, Honywood Community Science School
Teachers at Honywood had incorporated the Tablet into this approach to teaching and felt that the device allowed pupils to take part in learning without the teacher’s direct input at all times. This view was reflected across all subject areas:

They’re not using me all the time for everything and it encourages them to go and find things out for themselves, so I can spend my time on the art side of it and the practical, and now we’re doing that, rather than supporting them in finding out. When you’ve got someone here, just looking to find something ... It’s just nice that it’s so instant really.

- Teacher, Honywood Community Science School

Significantly, because Tablets allow pupils to express themselves in different ways (through research, video, apps, film) teachers believe they are able to gain a better idea of learning progress:

Marking their books wouldn’t empower me to know exactly what their understanding is, whereas them talking about it is a lot better way to assess what their understanding is. Traditionally, you just mark their books; now we get much more powerful evidence of how they’re actually learning and what they are thinking as well. That’s a real plus that the iPads have brought.

- Teacher, Honywood Community Science School

Despite initial concerns by some staff members who were less confident with digital technology, teachers had been encouraged by seeing the potential of Tablets in their lessons and the effects on pupils:

I think there was a lot of apprehension. But they’re all better at it than we are and they come and show me things and say, ‘oh, I found this’, ‘have a look at this’, or ‘look at what I’ve done with this’, and it’s just amazing when they come to you and you’re like, ‘that’s amazing, do you want to show some other people’, ... and just that side of it because they’re so proud of what they can do on it because of it, they are genuinely so happy to have these wonderful things and it’s really opened up so many doors to them.

- Teacher, Honywood Community Science School

### 3.1.2 Tablets and pedagogy at Longfield Academy

Reflecting the experience of Honywood teachers, Longfield Academy’s leadership team was keen to note that Tablets were influential, but part of a wider set of changes to school teaching:

Teaching style has changed undoubtedly but I think it’s quite hard to distinguish exactly why and put it just down to the iPads because all rooms now have interactive whiteboards, we’re in a brand new building and we’ve moved to collaborative teaching.

- Vice Principal, Matisse College, Longfield Academy

Despite the difficulty in separating the introduction of Tablets specifically from on-going changes to teaching and learning, the introduction of the device had seen the creation of support groups that centred on utilising the device in the best possible way:

In order to keep staff knowledgeable we publish a newsletter called iLongfield where we discuss apps being used, what’s good about them and what classes they are used in to share good practice. In order to produce these newsletters we put out surveys monitoring what apps are being used and whether they work or not.

- Vice Principal, Matisse College, Longfield Academy
The Tablets were believed to give pupils more options and freedom in their lessons, and to further facilitate that freedom the school has decided to increase lesson length to 120 minutes.

3.1.3 Tablets and pedagogy at Wallace High School

At Wallace High School the introduction of Tablets was supported by a framework for teachers to use the devices in lessons. This was intended to be flexible; if some teachers did not want to make much use of Tablets it would not matter. However, after the Tablets were introduced, it was noted that many teachers were doing more with the Tablet than the minimum required by the school, and this process allowed an evaluation process to take place:

(we said) Send us through a task or a piece of work that you’d be doing each term with each year group that uses the iPad; that is evaluated...so at least we set the minimum ... and we found that departments have worked much, much further beyond that, but that minimum was set...

- Principal, Wallace High School

A range of other outcomes from the use of Tablets was also evident at Wallace High School; some of them echoed the overall approach to teaching and learning taken at Honywood. One was a hope for a greater focus on teaching young people skills rather than content:

If we want to see a change in what young people are capable of doing, if it’s just about passing examinations and regurgitating a lot of information which it broadly speaking still is, we haven’t changed that much; but if we want to teach young people to be adaptable, to be resilient to changes in technology, there are other ways in which they can be tested and those changes need to happen to reflect the things that are happening outside...Those are things that are not really dealt with particularly well, I feel, at the minute, and I think there’s opportunity here in the use of technology to address some of these things because employers will be looking for this increasingly.

- Principal, Wallace High School

In particular there was a noticeable change in pupils’ learning following the introduction of Tablets:

It helps them, I suppose, to take hold of information and assimilate it; they would talk about learning and the fact that if they’re trying to understand something by exploring it in several different ways...

- Principal, Wallace High School

3.2 Teacher training

There were mixed opinions about the amount of training that was required for teachers to be able to use the Tablets in class effectively. Those who had received training found it invaluable, but those who had been left to discover how best to utilise the Tablets by themselves also thought that this approach was valuable. At both Longfield Academy and Wallace High School teachers were given the Tablet in the summer before roll-out, and were given training sessions.

Longfield Academy and Wallace High School both received support from Apple for teacher training, whereas Honywood did not, as their focus was not on teachers’ use of the Tablet. Both Longfield Academy and Wallace High School did however also use internal knowledge in teacher training to use the devices. All three schools had identified leaders within their own staff to support the others,
and had continued professional development with the Tablet throughout the year, continuing to build on internal expertise. This appears to be a significant and important factor in the success of the implementation of Tablets in schools.

3.2.1 Honywood

Teachers at Honywood were adamant that training prior to roll-out of the Tablets was not necessary. While some did admit that they had wanted it at the time, they now felt that any amount of training would have been a waste as pupils were always going to be more familiar with digital technology than them. They argued that it was simply a matter of trusting the pupils and letting them take the lead. Since the beginning of the academic year in 2011, teachers had gradually and organically become comfortable with how to incorporate the Tablet in their teaching:

*With what the kids bring to the table, we didn’t need to prepare at all.*
- Teacher, Honywood Community Science School

*I’ve got an iPad, and I don’t think it makes any difference to me having one, or to a teacher not having one, because they are moving so quickly – many times quicker than I am - that it wouldn’t make any difference.*
- Teacher, Honywood Community Science School

It may be however that this would not necessarily be representative for teachers at all schools. Training is likely to be more about building confidence, ownership, and trust in the process of implementing the technology and device. As one teacher pointed out, Honywood offers extensive teacher training, and it is likely that these teachers were already confident and felt ownership of the many changes the schools was introducing. The teachers acknowledged that the introduction of Tablets was part of the overall changes to pedagogical philosophy in the school. Teachers had been involved in trialling Tablets the year before, and viewed the device therefore as only part of the wider changes the school was going through:

*In terms of was there enough training , if you’d been here a while, you would have been preparing for this in one way or another for a long time.*
- Teacher, Honywood Community Science School

3.2.2 Alec Hunter

Alec Hunter was the control school and when asked about the potential scenario of all pupils being given Tablets the teachers at Alec Hunter perceived teacher training to be essential. Again it seemed that the purpose of this would be to build teacher confidence prior to Tablets being given to pupils, and to prevent them from feeling left behind as the pupils began using them.

*You’d have to give all staff one first and give us a chance…I have to admit I’ve never touched an iPad.*
- Teacher, Alec Hunter Humanities College

*I’d need one for a few weeks and some time... a week - with no children (to get used to one).*
- Teacher, Alec Hunter Humanities College
3.2.3 Longfield Academy

Teachers were given Tablets before the device was given to pupils. Becoming accustomed to the Tablet before pupils received them appears to have been an important factor in resolving any uncertainties teachers might have had, and was a means to build confidence. Longfield Academy began the implementation process by giving teachers Tablets and letting them experiment with them for a week. They also received training from Apple Distinguished Educators (ADE’s). Longfield had moved into a new school building at the beginning of the Autumn 2011 term and at the same time had made the decision to adopt Apple technology. The school had invested in MacBook Pros and iPad 2s for all teachers, iPad 2s for all teaching assistants, and had Apple desktop computers in key places around the school (such as the library); teachers were given training in using all of these devices. In addition to training from Apple, Longfield organised their own internal training groups in which teachers showed each other ways in which they were using the device. The school has also set up a newsletter where teachers share information, recommendations and tips about the Tablets.

The leadership reported varying levels of engagement with the Tablet from teachers, something they had expected. There were still teachers who did not personally use the device, but would nevertheless encourage pupils to use them. The leadership described the Tablet as intuitive and easy to navigate, and reported that there had been a shift in thinking from those teachers who had previously been sceptical of the introduction of Tablets, or even ambivalent about using technology, discovering that the Tablet was in fact less daunting than they had anticipated.

3.2.4 Wallace High School

Wallace High School had a strong focus on technology and the teachers were largely IT literate already. Most of the teachers were therefore positive about the roll-out of the Tablet, although a few teachers did still express concerns initially. These fears were allayed as teacher training was rolled out, and confidence was increased.

In a similar way to Longfield Academy, Wallace High School had made use of the Distinguished Educators from Apple, and allowed teachers to become familiar with their own Tablet device before the device was introduced to pupils. While Longfield had done this the week before the start of the academic year, teachers at Wallace High School had received their training in June, in order to allow familiarisation over the summer break. The head of IT now felt however that teachers should have started using the Tablet even earlier, preferably at Easter. Like Honywood, it was felt that using the Tablet was the best way to become confident and learn its capabilities.

The teachers’ Tablets came with gifted apps, including Pages, Numbers, Keynotes, iMovie, and teachers received training in these as well as other essential parts of the iOS system. Teachers received additional training in August just before the start of term. The IT department received more intensive training and were therefore able to support the rest of the staff, and pupils, after roll-out.

\[\text{5 The summer break is earlier in Northern Ireland that the rest of the UK}\]
The school organised training sessions for parents with the support of ADEs. Parents were taught how to use the Tablet, parental controls and internet safety. These parent sessions appeared to be an important factor in parental engagement with the trial, a point which will be further developed in Chapter 7, page 51.

3.3 Teacher Satisfaction with Tablet teaching

The introduction of Tablets was received by most teachers in the research as a positive move to enhance their teaching and to be abreast with the latest technology. It was also accepted that giving each child the opportunity to have a Tablet ensured equal opportunity to access information and content that might otherwise not necessarily be available to them; this was an important and significant factor for teachers. Some teachers had been early adopters of Tablets, and had used them at home. For others the notion of the device was new, and, it was acknowledged, intimidating. While there clearly had been some anxiety and concern amongst some teachers, it was noticeable that by the time the first wave of research was carried out, some six months after the introduction of the Tablet, teachers had become advocates of the device, and could not imagine how they had managed without it. However, teacher support is important. The more teachers were supported by school leaders and their ICT colleagues, the better. Additional training and support by suppliers, in this case Apple and its team of ADE’s, was an important factor in the way in which the Tablet was adopted and utilised.

Unlike Longfield Academy and Wallace High School, the teachers at Honywood School had not been supplied with Tablets. Approximately half the teachers at Honywood had bought their own iPads (at a reduced rate) and the motivation to do this was to enable them to become familiar with the technology that children would be using, and to enhance their lesson plans.

One teacher explained, for example, that she had bought one for her ‘own peace of mind’, wanting to make sure that she could research ways to use it for each lesson, and really understand what she was asking her pupils to do. This teacher taught Technology and felt that the Tablet could be especially useful for this subject, and she therefore felt a need to make sure she was familiar with the device. Two teachers explained that they had decided to purchase an iPad because of special responsibilities they held in the school, such as being team leader for Year 7, and wanting to make sure that they understood the device fully in order to answer questions from parents and pupils. Others had bought the device partly for their own interest as well as for use in school. Some of the teachers who had not bought iPads described being familiar with other Apple products, predominantly the iPhone, and therefore felt relatively confident with their pupils using the Tablet.

3.4 The way in which the Tablet was used to teach

There was a variation in teachers’ familiarity with the Tablet, and the extent to which they used the device to plan and execute lessons. Two lessons were observed in which the teachers had fully integrated the Tablet into the day-to-day tasks of their teaching and appeared adept at integrating the device in innovative and creative ways.
An example of this was a language lesson in which pupils were given partial goals throughout the lesson and were expected to work independently on these. The teacher was always available, observing the way in which the children were engaging with the task and giving guidance when necessary. The Tablet was used by pupils in various ways. Some used it for note taking, others to present their work, others to take photographs of their written work. At the beginning of the lesson the teacher had used a power point presentation through the interactive white board to explain the task.

Teachers would often plan their lessons by searching for appropriate apps or websites. Some of these were designed for educational purposes but many were not, and pupils were encouraged to find their own content. This was observed in all the schools in the research and it was noticeable that independent learning was encouraged through the use of the one-to-one Tablet.

3.5 Innovative ways of teaching and learning

Observation of classes in the research demonstrated the extent to which the Tablet was being used in a creative way for teaching and learning, as content designed specifically for subjects was often lacking. This was the case across all three schools. To address this, teachers were creating their own content, such as interactive iBooks and video tutorials which would then be distributed to pupils. Some teachers felt that a lack of educational content made it necessary for them to think of alternative ways to teach:

_We’ve had to be creative …. I mean last night I knew I was doing a Shakespeare insult lesson today. I thought, right, I bet there’s an app because there’s Shakespeare, this lesson’s existed for ages, so loads of schools do it, so there was an app fortunately. I just went onto the app store and just put ‘Shakespeare’, and ‘Shakespeare Insults’ came up as about the third choice actually, and there’s a few to choose from and I downloaded a couple of the free ones. One of them was a bit rubbish, not very helpful, but then they have the generator one which is what we were going do but by using worksheets, so it’s actually not that different, it’s just that it was a bit more interactive for them._

- Teacher, Honywood Community Science School

Many parents felt that using creative apps that were not necessarily designed especially for education was particularly engaging for their children:

_Things like Eden my daughter uses for homework though it could be seen as a game…but she’s utilised it in pieces of work she’s had to do._  
- Mother, Honywood Community Science School

_It can be used so creatively that homework that could be boring, is more interesting…she can sit down and make a movie. The school encourages them to do it how they want to do it, so I think that helps her because she can be creative. It’s in all sorts of subjects. She likes the flexibility._

- Mother, Honywood Community Science School
3.6 Collaborative learning

Tablets appeared to be facilitating more collaborative learning, especially through its role in improved communication. Applications such as Facetime allowed pupils to ask each other for help or discuss their schoolwork at home, and through e-mails they were able to keep a running dialogue with their teachers out of school. Teachers claimed that this allowed the learning they facilitated at school to continue at home, breaking down barriers between school and home, and making communication more seamless.

*It may be started in the classroom, it may be started at home. But it carries on. I think the iPad has made a big difference, in that respect*  - Teacher, Honywood Community Science School

Pupils used the Tablet in different ways and it was clear from observation of lessons that much collaborative learning was taking place. The fact that the device was both personal and portable meant that it could easily be transported in the classroom, or to a friend’s house which, when combined with the Tablet’s communication options, enabled greater collaboration.

*You get a lot (of emails) from your friends, like outside school, just going, ‘have you done your homework yet’ and stuff. But we sometimes get them from teachers about, ‘oh, I forgot to say this in the lesson’, or ‘for the next lesson you need to bring …’, or something like that, or your homework that you forgot, .. but sometimes you have this problem where you can’t find your email, you sometimes delete them, so you have to like save them in places if they’re important.*  - Year 7 Girl, Honywood Community Science School

*Everyone can do their own bit on presentations, so that rather than all share one computer, we can all contribute in our own way.*  - Year 11 Girl, Honywood Community Science School

*It’s quite easy to share things...and put them all together in the end, and make one project.*  - Year 11 Girl, Honywood Community Science School

3.7 Pupil and parent perception of independent learning

Children liked the notion of Tablet learning, although the thought of independent learning was daunting for some. Parents expressed mixed views about the notion of Tablet learning and the degree of independent learning that this might bring. While recognising the need for children to become independent, parents tended to think in terms of the teaching methods they had experienced when at school. Once again individual knowledge of Tablets affected the response to Tablet learning at both Honywood and at the control school, Alec Hunter.

3.7.1 Pupil perception of independent learning at Alec Hunter

Focus groups were carried out with pupils in Years 7, 9 and 11 at Alec Hunter and at Honywood. Overall similar concern about transition to secondary school was expressed by Year 7 pupils. When asked about the notion of pupil-led learning and using the Tablet to enable this, the youngest pupils at Alec Hunter expressed some uncertainty and concern about the notion of independent learning. However they recognised that being independent would be better for their future, and felt that this
would be useful learning when they had completed school. The Year 9 pupils also agreed that independence was beneficial, but still felt dependent on teacher guidance to make sure they were on the right track. Similarly Year 11 pupils thought independent learning was better and could recognise that this would encourage engagement with school work, but, as with Honywood, these pupils were currently focused on GCSE revision, and preferred clear instruction and guidance on this.

3.7.2 Parents’ perception of independent learning at Honywood

Although Honywood parents expressed full support for the school’s ethos and believed it was preparing their children for the future, the transition had been difficult for some children. Particularly in subjects they struggled with, children had found it hard to be independent and wanted reassurance. Parents saw this as part of the process their children would have to go through, but acknowledged that younger children especially needed support.

_They’re Year 7 and yet they’re given this massive responsibility to go on and learn things for themselves. It’s really well placed and really great but sometimes they’re not mature enough to plan for themselves. They haven’t had those skills at primary school and it’s such a big difference._

- Mother, Honywood Community Science School

Parents in focus groups in the two feeder primary schools with children in Year 6, about to start at Honywood, agreed that their children appeared to learn more from independent research. Through independent learning, children, it was believed, experienced a sense of pride and satisfaction in finding things out for themselves. Parents did stress however that at this age independent learning was going to be a slow transition, and that pupils would need guidance and support. Research skills were still underdeveloped and parents believed that some children were merely cutting and pasting information from the internet. There was concern too that many of the sources available online were not appropriate for young children.

Most participants in the parents’ focus groups were keen to point out that children learn in individual ways, with different means of absorbing and learning information; it was important that this was acknowledged, and catered for, within the pedagogical model adopted by the school. They also acknowledged that their children’s growing independence was a challenge to them as parents:

_It’s a learning process for the parent as well as the child I think. You have to learn to back off and the child has to learn to embrace more responsibility._ - Year 6 Mother, St. Peters

_He’s an only child and I’m very mothering...for me it’s going to be quite hard to step back and let him get things wrong...at the moment I’m quite happy him coming to me and saying ’can you check this?’...as he gets a bit older I’m worried he won’t want me anymore, he won’t need me anymore._

- Year 6 Mother, St. Peters
Chapter 4: Tablet Learning and Teaching at Honywood

The focus of the research was at Honywood in Essex which has a strong ethos of independent, pupil-led learning which was integral to the introduction of the Tablet. The devices were thought to give pupils a more individual learning resource. The Tablet was introduced at the same time as a new curriculum and longer lessons (100 minutes), and these changes were designed to support independence. The following chapter considers teachers’, pupils’ and parents’ perceptions of the implications of the move towards independent learning at Honywood.

4.1 A change in discourse: how pedagogy is changing

There has been a change in discourse at Honywood; a change in the way in which pedagogy is described. Pupils are referred to as ‘learners’ and teachers are referred to as ‘facilitators’. This change in terminology reflects a profound philosophical shift to an emphasis on independent learning, and teachers’ facilitation of pupil autonomy. The change was described by some teachers as a ‘rebranding’ process, which they felt had altered the way both teachers and pupils thought about school. Teachers agreed that the school’s new philosophical approach had meant a big change for them:

*It’s about giving away that control, and having trust that the kids are going to go off and use that time wisely.*

- Teacher, Honywood Community Science School

4.2 Teachers’ perception of independent learning

Teachers expressed strong support for the philosophy behind pupil-led learning at Honywood. They argued that teaching pupils how to be independent and autonomous was important to prepare them for the world beyond secondary school. They also argued that this led to increased motivation and a deeper level of learning. The current Year 7 pupils had used the iPads and experienced the new curriculum since their first day at Honywood, and in their teachers’ opinions this made them more confident and independent than pupils in higher year groups at the school.

One language teacher explained how her pupils were more motivated by learning to say what they wanted to express in their own words, using the language being taught, instead of a list of pre-prescribed words. Other teachers agreed that the Tablet was giving pupils more resources and making them less dependent on teachers’ continual instructions:

*(this pupil) is using Bitesize to try and find out some things and it’s completely opened up their world of independence because they’re not coming to me anywhere the same level of saying, ‘what do we need to do?’, or ‘where can we go?’, because they know that they can just type in a question into Google and it’s going to take them to something; they know that there are certain websites that are going to be more useful than others.*

- Teacher, Honywood Community Science School
4.3 Classroom management when using the Tablet

Longer lessons and a focus on independence might be expected to create a challenge for teachers in terms of classroom management. The teachers at Honywood however reported that this had not been a significant problem. The pupils were given freedom to take advantage of the mobility of the Tablet and use it outside the classroom; they could usually decide themselves whether or not they wanted to use the device.

A few teachers admitted to having been concerned about gaming and chatting in the classroom at the beginning of the year, but had not found it to be a problem. There was the odd case of this happening, but they were usually easy to spot and pupils would put the device away when asked to do so. There were differences between the younger and older pupils; teachers believed it had been much harder for older pupils to accept the Tablet as a learning tool, and not primarily a gaming tool:

They’re so much better in Year 7, at being able to produce what they need to produce, even though there are other distractions on there. Because they’ve known no different, they can do the piece of work they want to produce, alongside playing a game at the same time. They still get the learning done.

- Teacher, Honywood Community Science School

Teachers pointed out those older pupils had experienced several years of being admonished for using their mobile phones in class; once given permission to use their Tablets freely the temptation to explore non educational content such as gaming was too great.

Another teacher explained that he did not mind his pupils taking a five minute break to play a game. It is important to remember that the pupils at Honywood have 100 minute lessons, and as this teacher pointed out, that is a long period of time to retain concentration. A short break to play a game functioned, in his opinion, as a way to ‘recharge the brain’ before returning to work.

4.4 Communication and collaboration

Independent learning at Honywood was supported by teacher communication via the Tablet. Teachers were now receiving far more e-mails from pupils, including at weekends. They were largely happy about this, and described it as an instant and effective form of communication which therefore did not take up too much time. Some did, however, feel that pupils needed to be taught how to use the device properly and to understand boundaries; how to write formally to their teachers, and when to reasonably expect a reply.

The Tablet had also, in the teachers’ opinion, increased communication and collaboration between pupils, and apps such as Facetime allowed them to “visit each other’s houses without leaving their living room” (Honywood Teacher). A language teacher explained that her pupils were using the Tablet to communicate with pupils in the Netherlands through their VLE. This increased opportunity to communicate with peers was appreciated by the pupils themselves:

You can communicate a lot more with it so I can email someone in my group in the holidays even...and you can work together. You can use Apps like TextMe and share ideas through that.

- Year 11 Girl, Honywood Community Science School
4.5 Assessment

Increased communication via e-mail was felt to support teachers’ continuous assessment of pupils; continually receiving work proved to be easier than receiving a large amount of work to be marked at one time, and teachers were able to keep a record of their pupils’ progress.

The philosophy of pupil-led learning was informed not only by the belief that ownership of learning increases motivation, but also by the observation that pupils learn in different ways. Pupils were therefore encouraged to choose how they wanted to solve a task. The Tablet could provide these resources in a variety of ways, and was valued by pupils for offering them options. This was appreciated by teachers who felt that they were able to offer pupils more freedom. Teachers felt that this made it easier to assess pupils, as much of the work done on the Tablet offered them a fuller understanding of how the pupils were working:

*The diversity of what you get now, in terms of what they are understanding... at the end of the day, a pen and paper doesn’t necessarily suit all of them all of the time.*

- Teacher, Honywood Community Science School

4.6 Observations of teaching and learning at Honywood

In the in-depth interviews and focus groups at Honywood, teachers explained the way in which they would set a task at the beginning of a class and step back in order to let pupils choose how to solve it, and this process could be observed in the classroom. Teachers frequently suggested or recommended to pupils the use of the Tablet, although this varied depending on the teacher’s level of engagement with the device. Often pupils would begin by doing research online, with the teacher walking through the classroom guiding them. Teachers gave pupils the freedom to choose how they wanted to present their work, with many choosing the Tablet in creative and imaginative ways. This was noted in three subjects that were observed in the research: Maths, Languages and English, which are described in the following sections.

4.6.1 Maths

Maths has been identified in recent years as an area of concern by the Department for Education. Observation in class and interviews with Maths teachers at Honywood identified the ways in which the Tablet augmented maths teaching. Maths teachers made frequent use of online tutorials, supported by textbooks and worksheets. These tutorials were described by teachers as a new way for pupils to learn the maths curriculum, giving pupils more independence in terms of progression and working through the content at their own pace, instead of relying on their teacher for the entire process. After watching the tutorial they could do practice work and test themselves at home and at school through worksheets. The pupils were given a lot of independence, but teachers acknowledged that this has been challenging, especially at the beginning of the year. They felt confident however that pupils were undergoing a positive shift in the way they learnt and understood coursework. Pupils were given guidance on finding resources, as this was an area that could be challenging for them, especially in Years 7 and 8.
Observation of Year 7 Maths at Honywood showed pupils working independently and at their own individual pace. The teacher tended to combine overall class observation and support with dealing with individual queries. Many pupils were observed watching online tutorials; some took notes with pen and paper while watching the video, while others took notes on their Tablet after watching the tutorial. When pupils moved on to practising the exercises, several had chosen to work with paper and coloured pencils, and some were using the Tablet to practise and present what they had learnt. Several pupils had made films of themselves explaining what they had learnt with the help of iMovie. One boy had made a stop motion animation of his lesson with Stop Motion HD. Other popular apps were Keynotes, Pages, neo, Annotate and Sketchbook HD. The teacher claimed that these children were far more confident about presenting their work than any of the older year groups.

### 4.6.2 Languages

Observation of Year 7 Languages found pupils encouraged to work in groups, without much interference from their teacher. They were given partial goals throughout and were expected to work independently on these, while the teacher moved from group to group, giving guidance.

In one session pupils had been sent instructions beforehand, via e-mail, to create a dialogue that was to be set in a German café, as well as to create a food and drink menu for the café. The Tablet was used in various ways in this lesson. Some used it to take notes and write down their German dialogue, while others used pen and paper for this. Many used the Tablet for translation and as a dictionary. The pupils had downloaded a free German app (Learn German) and some were taking photos of their German work and attempting to use photo recognition for translation, although this seemed to work less well. The pupils also used Google Translate, but had been told only to use this application if they had to, and only for single words because sentences were likely to be incorrect.

The main use of the Tablet in this lesson was for filming. After finishing their script and with teacher approval of their preparation, pupils set off to the drama room to film themselves acting out the dialogue. They were encouraged to get into character, and most of the pupils appeared to be very confident about doing this. The less confident pupils undertook the task of filming the role play, and distributed the film to other group members via e-mail. Once back in the classroom the pupils were asked to improve their work before the next session, at which they would be presenting their menu in German, and their film, to the rest of the class.

The pupils seemed very engaged during this lesson, especially with filming and role playing. Creating videos is a common activity in many subjects at Honywood, but the pupils appeared to be motivated by the opportunity this creates for learning and recording their work.
4.6.3 English

Observation of Year 7 English at Honywood found that Tablets were integral to the lesson, which had clearly been planned with the device in mind. One English teacher had purchased an iPad in the summer holiday preceding the introduction of Tablets in the school, and she was very familiar with the device. This teacher’s lesson was designed to allow pupils to work independently on their Tablet, and apart from setting the task at the beginning, and instigating discussion throughout the session, the teacher was seen to interject very little.

This particular lesson explored the significance of settings for stories through the example of detective stories. The teacher had found and tested a free app (Nick Chase Detective) beforehand which she asked pupils to download at the beginning of the lesson. Throughout the session pupils discovered other relevant apps which they suggested to the teacher, and she subsequently announced them to the rest of the class, listing them on the whiteboard.

After working with the app to explore the setting of this particular detective story the teacher asked pupils to do research on other detective stories and settings for 5 minutes, which was followed by a whole class discussion. The pupils were asked to design their own detective office, based on a detective character they had developed in a previous lesson. Pupils were encouraged to use their iPads to solve this task, although the teacher made it clear that it was equally acceptable to use pen and paper, but none did. Many solved this task using a Home Design app in 3D. Others used mind-mapping apps or created presentations using KeyNote.

During the research, and the work with their own detective stories, the teacher moved around the classroom guiding each pupil if needed and making sure they were keeping to task. Although each pupil was working independently, they were continually talking about their work, and showing each other what they were doing.

4.7 Pupil perception of tablet learning at Honywood

The pupils had responded differently to the changes that Tablets had introduced to pedagogy, depending on school year and level of maturity. Transition from Primary to Secondary school in terms of responsibility and independence is always challenging for Year 7 pupils, but it is notable that at Honywood this was the year group for which the implementation of Tablet learning appeared to be most successful. Pupils in higher year groups were said to be more resistant to change and some were less adept at implementing Tablets in their learning. This contrast was noted between the Year 7, 9 and 11 pupils interviewed in the research. For example Year 11 pupils were entirely focused on upcoming GCSE exams and therefore preferred clear instructions from teachers and were less willing to undertake independent work. On the other hand while Year 7 pupils felt a little insecure in the new school, and were more tentative in their response to independent learning, they adopted the Tablet with alacrity.
4.7.1 Year 7

Several pupils in Year 7 felt that the new independent form of learning, coupled with change of school and entering the first year, had been overwhelming, and some had found the transition difficult. The amount of homework had increased, and much more responsibility was expected from them. It is not uncommon however for children to feel this at the point of transition to secondary school⁶. The teachers at Honywood were aware of this, and several acknowledged that some Year 7 pupils still needed additional support. Although many found it challenging, the children also recognised and appreciated the rewards of working independently:

Sometimes it’s quite challenging working by yourself…when I was in primary school we always had the teacher doing like set lessons and you had to do what the teacher was doing and sometimes that gets a bit boring…but now in Honywood you can pick what things you do…and you can challenge yourself more. - Year 7 Girl, Honywood Community Science School

It’s harder working independently. - Year 7 Boy, Honywood Community Science School

Like in Maths we’re sent off to do work on our own and we have this objective sheet that we tick off as we go along but it’s better to have the teacher do class work with you. We sometimes have starters at the beginning of the lesson where we do group work, but when we do it independently it’s a bit harder. - Year 7 Girl, Honywood Community Science School

4.7.2 Year 9

Compared to Year 7 pupils, children in Year 9 were more confident and felt well integrated into the school. They had experienced Honywood both with and without Tablets, and felt that the introduction of the device, as well as the other changes to pedagogy, had been a motivating factor.

The pupils in Year 9 were also confident about working independently. They associated the Tablet with this and felt that working in this way was more rewarding. They appreciated teacher guidance to keep them on track, but preferred to find information for themselves:

It’s more independent. You can do more stuff on it. Sometimes like on iTranslate you ask the teacher for the word first and with the iPad you find it out yourself…you feel like more accomplished…like more rewarding when you finish it… because it makes you feel like you’ve done it more yourself. - Year 9 Boy, Honywood Community Science School

However pupils in this year also associated Tablets with games, and sometimes struggled, especially at the beginning, to separate learning from entertainment. This was something that became noticeably less difficult as the year progressed however.

4.7.3 Year 11

The oldest pupils at Honywood were the least dependent on the Tablet. This finding was supported by the teacher focus groups, as well as the parent focus groups and especially by those parents with several children in the school. Teachers argued that pupils become reluctant to change their learning style the higher in the school they were. Pupils explained that they were currently spending all their time revising for exams, and preferred using books, pen and paper for this. These pupils were hesitant to spend time on anything not directly relevant to their exams, which included doing research online or learning new things. They were therefore also very dependent on their teachers’ guidance to make sure they were on the right track, and did not want to waste time looking online themselves, instead requesting clear instructions from teachers:

*At this stage I prefer to be told what I need to learn, but a year ago when I didn’t have GCSEs to worry about I’d have figured it out myself...at the moment I want to be told what to do and where to find it for revision.*  
- Year 11 Boy, Honywood Community Science School

*Towards the end (of revision...nearing exams)...you want to know you’re learning the right stuff and not wasting your time looking for something when the teacher knows where to find it...so we can do it quicker and learn it faster.*  
- Year 11 Girl, Honywood Community Science School
Chapter 5: Content

Accessing appropriate content was an important aspect of the success of the Tablet in school. While there was reliance on the iTunes store, teachers became adept at finding content that while appropriate, might not always be educational, and pupils too contributed to this process. Teachers had also begun to design and create their own content.

5.1 Apps

Pupils at the Tablet schools were making use of a large number of apps for many aspects of their schoolwork. Teachers encouraged this, and there was a great deal of collaborative sharing and recommendation of appropriate apps. While pupils felt that there were sufficient educational apps available to them, and that these were fairly easy to find, teachers tended to disagree with this. Beyond educational games many teachers felt there was little appropriate content supporting curriculum based learning. Although all three schools had had frequent contact with educational publishers it was their opinion that this sector was still not up to date with what was needed; such apps often appeared to be merely replicating a text book without using the creative opportunities that digital interactive content could offer. It was argued in particular that some of the educational content that had been provided looked inferior to the digital content pupils were familiar with using, both in school and in their spare time, for example through interactive games.

Pupils were using apps very creatively in their lessons, and many felt that apps were more important than websites. There appeared to be a system set up at each school for sharing information about good apps, such as an App Newsletter, or a section of the school newsletter with recommended apps, including ‘app of the week’ on notice boards, and listing recommended apps on notices posted in subject classrooms. In addition to subject-specific apps pupils at all schools had a group of apps that were widely used across subjects; these included Key Note, Pages, popplet, neu, Annotate, iMoviesl, Sketchbook HD and Garageband. These apps were used to create visual or multimedia materials to help them with their learning or to present their work to others, and represented a large part of the way the iPad was used by pupils.

Parents were impressed by the amount and quality of available apps, and thought most of them were reasonably priced. Parents claimed that the apps for Apple devices were superior to Android, and argued that this made the iPads a better choice compared to other Tablets. It is not clear however much this was based on actual experience of Android, and how much on perception of Android versus Apple. Their children mostly downloaded free apps, but parents accepted the downloading of paid apps if they were reasonably priced. Parents had set up an iTunes account for their child, at the suggestion and with the agreement of the school, and were happy for the children to use this as long as they were told when it was used. However all schools emphasised that where possible it was important to download free apps.
While pupils expressed satisfaction with the availability of apps and parents were impressed with what they had seen, teachers expressed a concern that there was a shortage of educational content supporting the curriculum.

There’s quite a lot of multiple choice style mental arithmetic ones. At the moment, in maths, we’ve found it quite hard because things like humanities and science, they’ve got loads of apps that are really useful for so many things but maths is a little bit behind on the app front at the moment. I don’t know why. But I think that’s something that will, as more schools go down this route, that some of the publishers will say, look, we’re going to have to have an electronic textbook or have an app for that. They’re just going to have to. We use MyMaths a lot for their independent homework, independent study at home and that would be brilliant if that was an app but they can’t use it on their iPad because it uses Flash, so it’s the little things like that that we’ve come across.

- Teacher, Honywood Community Science School

The leadership team at both Honywood and Wallace High School suggested a digital library model, where educational content could be downloaded for a specific period of time, and then removed, as most of the content they used was only needed temporarily. There were also requests for a better database system for apps making it easier for teachers and parents to find useful apps. Leadership and teachers at the schools also requested new methods of distributing content. Pupils and teachers are currently purchasing content for each device, which is not a cost effective method of acquiring educational content.

Across the three Tablet schools there appeared to be a sense of frustration with the educational publishing industry for not fully engaging with the potential of interactive content. All three schools had been in contact with publishing houses and wanted to collaborate and share their knowledge about what content is needed, but felt that developments in this sector were far slower compared to the app developing industry in general. Teachers and parents were aware of the enjoyment children had in being able to interact with content. Teachers spoke of publishers merely transferring a book into a PDF file, and thus taking no advantage of the opportunities offered by the Tablet.

5.2 Engaging content

It was noticeable that teachers at the Tablet schools became innovative in the way they made use of content that was not designed for education, and were using digital content in very creative ways to overcome the lack of educational content. Many teachers had begun to develop their own content, such as interactive iBooks and tutorials. They argued that as pupils are already familiar with non-educational apps such as games, they will increasingly expect digital educational content of the same standard, which the industry does not currently supply and which most teachers do not feel able to create themselves.

...what they’ve done is they’ve taken a book that’s a written book and made it electronic. What they haven’t done is written an electronic book rather than try to adapt one, because that’s the starting point they need to flip it over and that’s just not happening yet because there isn’t the business out there for them yet.

- Vice Principal, Matisse College, Longfield Academy
We’ve had two or three of the major publishers come and say, ‘oh, we’re really interested in creating these’ which we would be very happy to trial and give input on and then we never hear from them again because it takes so long to develop it. What they’re doing is just putting their textbook on as an e-book and actually that’s not what we want. We’ve had staff developing some e-books that are absolutely brilliant. - Vice Principal, Matisse College, Longfield Academy

Teachers argued that there is a shortage of engaging apps for the learning process as opposed to practice exercises. Many examples have been found of textbooks merely copied onto the internet or into an app, which they argue does not engage pupils. Teachers were aware that pupils are already interacting with exciting content outside school, and will expect their educational content to be of the same quality.

5.3 Finding reliable information

While there is an expectation among young people that they will be able to find dependable and trustworthy information online, and despite the abundance of resources available, searching the internet for information can be difficult. The amount of information available online can be daunting, and finding reliable resources sometimes proves to be a challenge. Pupils tended to use Wikipedia, and websites such as Yahoo Answers and Wiki Answers. Despite being easy to navigate and accessible, these are not considered reliable sources of information in a school context and the schools had told pupils not to use Wikipedia. It seemed however that this advice was not always adhered to, as this discussion at Honywood among Year 7’s illustrates:

“Wikipedia maybe, I know everyone thinks it’s like rubbish, but it’s actually quite good!”
“Yeah, and Wiki Answers and Yahoo”
“Yeah, because Wiki Answers is just simple answers”
“They’re not confusing!” - Year 7 Pupils, Honywood Community Science School

There may therefore be a lack of content in terms of tools to help young people to navigate both the amounts of information available, and reliable sources of information. Both teachers and parents felt that this skill was underdeveloped in many pupils, and that it would take time for pupils to fully appreciate the need for ensuring validity and reliability of online content:

My son will look something up, take the first answer and if it’s not absolutely clear in his mind what it says, he’ll give it up or come and ask for help. The first answer is usually Wikipedia which isn’t necessarily right nor written in terms that he finds easy to understand.
– Mother Y7 Boy, Honywood Community Science School

It’s about them learning research skills. I say to them ‘you’ve got the largest library in the whole world here at your finger tips’ but from a child’s point of view it’s like putting them in a library, turning them around and saying ‘well the information’s in here somewhere’. They are overwhelmed with the information that’s thrown on there. You’ve got to guide them.
– Teacher, Alec Hunter Humanities College

Accessing information through the internet rather than through the school library was, however, considered to be a strong benefit of the personal devices, and teachers felt that this was broadening
pupils’ horizons. One teacher described the local area as a ‘white, middle-class enclave’ and explained how communication technology was allowing pupils to look beyond their own cultural boundaries. An art teacher described the impact this was having:

Before, if you asked them about a particular artist a) they wouldn’t know, b) they wouldn’t know how to find out. Most of them will all know, for instance if you asked about Hockney now, they all know, and if they don’t know, they’ll go and find it.

- Teacher, Honywood Community Science School

Other teachers agreed, one giving the example of being able to follow the aftermath of the Japanese tsunami.

“It allows you to experience things that you couldn’t have experienced before. How could I possibly try and illustrate the aftermath of the Japanese tsunami? But we were in school when that happened, and we had Sky News up and we were watching it as it unfolded. And the kids get that, they get that whole idea of they are able to experience the world’s history, in the making!”

- Teacher, Honywood Community Science School

5.4 Age and content for exam revision

Pupils in Year 11 were not using their Tablet as much as younger children. They were fully focused on revision for their GCSE’s, and believed that revision books were more reliable than the internet, and easier to access. Learning new research skills through their Tablet was not something that they felt they had time for, and they preferred to work with the tried and tested traditional methods in this period leading up to their exams. Teachers confirmed this, noting that there was much more adaptability from younger children, and indeed pupils in the Year 9 group spoke of using a revision app. Teachers described how older year groups were finding the transition from seeing the iPad as a gaming tool to a tool for learning much more difficult, and this was reflected by Year 11 pupils in the focus groups who admitted that they were easily distracted by the device, which was another reason to continue to use revision books at this time. When the younger years reach GCSE levels there will however be a need for more interactive revision content; this could include cue card apps, quiz apps or other learning software.

5.5 Maths content

As part of this research Maths teachers at Honywood were consulted about the current availability of apps and other forms of appropriate content supporting Maths, and what they would like from content providers. The teachers had strong views, believing that there was not yet sufficient Maths content available. Content that facilitates greater interaction between pupil and teacher was requested. One teacher suggested an integrated app with both learning resources, that is how to do something, and practice resources where pupils’ material or presentations are sent straight to the teacher in order to receive feedback. This would importantly give teachers insight into what pupils are doing at home, and how their work is progressing.
The Maths teachers would like content to exhibit the functional aspects of maths; putting maths in a real life context would help pupils understand its purpose better, and demonstrate how it can be applied in their everyday lives. They also requested the software to visualise the mathematical concepts that many pupils find hard to understand through traditional methods, for example building 3D models or aeroplanes:

There’s quite a lot of multiple choice style mental arithmetic ones. At the moment, in maths, we’ve found it quite hard because things like humanities and science, they’ve got loads of apps that are really useful for so many things but maths is a little bit behind on the app front at the moment. I don’t know why. But I think that’s something that will, as more schools go down this route, that some of the publishers will say, look, we’re going to have to have an electronic textbook or have an app for that. They’re just going to have to. We use MyMaths a lot for their independent homework, independent study at home and that would be brilliant if that was an app but they can’t use it on their iPad because it uses Flash, so it’s the little things like that that we’ve come across.

- Teacher, Honywood Community Science School

5.6 The use of Flash

The iPad 2 (the device of choice in the three Tablet schools in the research) does not support flash, which has been a challenge for the schools. The most significant example of this is the website MyMaths, which is extremely popular with pupils and was used by the schools included in the research. This meant that many still had to do their Maths homework on an Android device (often the family computer) in order to access MyMaths. The schools had discovered ways around this, but teachers felt that this was needlessly complicated, costs money (requiring additional apps) and time consuming.
Chapter 6: Pupils’ Motivation to Learn

A key aspect of this research is the role technology, and especially Tablets, can play in motivating young people in their school work. This chapter examines parents’, teachers’ and pupils’ perception of the ways in which Tablets may play a motivational role in pupils’ engagement with school and with schoolwork.

6.1 Pupil expectations

Several pupils at Honywood admitted that initially they had associated a Tablet with gaming and not with educational use, and this prompted additional excitement about the news that they were to receive their Tablet.

I was happy…I didn’t believe it. - Year 11 Girl, Honywood Community Science School

I was well excited...like buzzing. - Year 11 Boy, Honywood Community Science School

We were told that we’d get them a few weeks in but we got them on the first day and we were just sitting in the hall getting these big brown boxes and it was all really exciting and we were like, ‘yes, it’s finally here’, it was really good. - Year 7 Girl, Honywood Community Science School

Pupils quickly realised however that the Tablet could be used for schoolwork in many different ways:

Before we got it I thought it might not go down very well…but it has. It completely changed my idea from having iPads in the school. I thought playing games on it and getting distracted because then you didn’t really know the educational Apps on it. Now you do…it changes your mind when you find the Apps that are good on it. - Year 11 Girl, Honywood Community Science School

Although parents and teachers of pupils at Honywood reported high levels of excitement over the Tablet, especially at the beginning of the year, teachers thought that for most the novelty of the iPad as a gaming device had worn off, while parents argued that the excitement of using it for schoolwork remained.

6.2 The iPad factor

Although this research assesses the impact of Tablets on teaching and learning, all three schools reviewed were using iPads (see Chapter 1). It is therefore not possible to comment on comparison or make an assessment of the impact of the ‘iPad factor’. It is acknowledged that these devices are popular with children as well as adults, and are recognised as desirable objects. Schools, including our ‘control school’ Alec Hunter, acknowledged that iPads had been an effective way of involving parents in their children’s learning. Alec Hunter, while not adopting one-to-one Tablets, had purchased thirty-two Tablets especially for this purpose.
Parents at Honywood had observed their children’s excitement over the Tablet, and acknowledged the ‘iPad factor’ as contributing to pupils’ motivation to become engaged with schoolwork. Another motivational factor, unrelated to the brand, was that Tablets represented a change from the way things had previously been done at school. The experience of change, the knowledge that the school had adopted what was at the time (summer 2011) the newest technology, and the sense of the school moving forward, had made both parents and pupils more engaged with the school.

Many parents did not feel comfortable about isolating the effect of the iPad, but did acknowledge that the children had been impressed by being given a device they knew was expensive and desirable. One parent from a Year 6 primary school group told of another parent who had bought a Tablet device from another provider, and her child not being interested in it. It is, however, very difficult to ascertain the importance of the Tablet being an Apple device. At Honywood the novelty of the Tablet was thought to have worn off by the summer term, but is difficult to determine whether the brand was still a motivating factor.

_It’s the novelty of wanting to be on the iPad constantly._
- Year 6 Mother, St. Andrews (about older child)

_The novelty factor for ... (her daughter at Honywood) having an iPad hasn’t worn off...and because of that, she’s much more enthusiastic about doing her homework._
- Year 6 Mother, St. Peters

It should be noted that pupils at the control school, Alec Hunter, were aware that Honywood Community Science School (a school nearby) had adopted one-to-one iPads. The iPads for some pupils at Alec Hunter appeared to be a status symbol, and several thought its adoption at Honywood might make a good impression on the community, attracting more pupils, although they were not convinced of its educational impact. Many Alec Hunter pupils were using a variety of Tablet brands at home however, so it should not be assumed that other brands of Tablets would be rejected. It was the notion of a one-to-one device in school that was most compelling for them. Importantly, none of the pupils at Honywood expressed a preference for Apple products when asked whether the brand made a difference. These pupils appeared to be less aware or knowledgeable however of other Tablet brands, and were therefore not sure what the difference would be.

### 6.3 Teachers’ views of pupil motivation to learn

This stage of the research was carried out in the summer term, at the end of the first academic year of one-to-one Tablet adoption. Honywood teachers felt that it was too early to assess the full impact of the changes the school has experienced, especially as Tablet adoption came at the same time as a new style of teaching. There was a general consensus however in all the schools in the research that the adoption of one-to-one Tablets appeared to promote greater motivation to learn.

As reported in Chapter 4 (see page 33), Honywood’s introduction of Tablets was part of a decision to promote pupil-led learning, and the Tablet was seen as a tool for achieving this. When discussing the marked increase in pupils’ motivation to learn, most teachers linked it to the change in curriculum and the focus on pupil independence. The Tablet, they argued, was an instrument that allowed
pupils to be in control of their own learning, which in turn prompted greater motivation. Teacher leaders at Longfield and at Wallace High School however described a new-found interest amongst pupils in searching and finding information. As one leader said, ‘I’ve never had a child come to me before showing me something interesting in a text book, but now I have children coming up to me every day saying “have you seen this?” or “have you see that?”’

Teachers acknowledge that the Tablet is valued by pupils for offering them variety and options in how to do their work and this is appreciated by their teachers who feel they are now able to offer pupils more freedom. Having that freedom is integral to working independently, and is, they believe, an important factor that motivates pupils. This motivation lay not only in the options the device offered, but also the ease with which it offered them. The Tablet had everything in one place, easily and instantly accessible. The nature of the software and applications also meant that it was easy to make something that looked impressive, giving pupils a sense of accomplishment and pride in their work.

*It gives them so many different ways of presenting their work.*
- *Teacher, Honywood Community Science School*

However while most teachers noted a greater motivation to learn, there were examples of pupils who found the distraction of the Tablet too much to resist, and therefore were less easily engaged. It is important to note however that this problem was not specific to the Tablet, and that these were pupils who were likely to be distracted by other things as well:

*These are boys that would go home from school and spend from four o’clock in the afternoon to three o’clock in the morning playing on their Xbox.*
- *Teacher, Honywood Community Science School*

For several teachers the motivational factor of the Tablet was linked to its potential to broaden pupils’ horizons, help them feel connected to the world beyond their own immediate surroundings and enable them to see the real benefits of what they were learning.

*In a matter of seconds they can have access to the French news, their French partner in France – it’s a door open to get out of Honywood…it makes it real, and gives a real purpose for them to learn.*
- *Teacher, Honywood Community Science School*

Teachers’ perception of the Tablet therefore was that it was indeed motivating pupils to become engaged with schoolwork and learning, but that this was intrinsically linked to an ethos of encouraging independent learning:

*I would say that it’s that design of learning that gets the best out of the iPads.*
- *Teacher, Honywood Community Science School*

They can be learning something, and they’re not held back by anybody else, because they can learn what they want to learn and move onto the next part – they can finish what they are doing, move on, and the people behind them can move at their own pace… they have that ownership, in Maths in particular, to do what they want, finish it, move on, rather than wait around for others to catch up. That in itself is a big motivation.
- *Teacher, Honywood Community Science School*
6.4 Parents’ views of pupil motivation to learn

Parents believed that Tablets were encouraging their children to become more involved in schoolwork and learning. There were several reasons for this: improved communication was an important factor with children having the opportunity to talk to their teachers and friends about their schoolwork via the Tablet, and finding it easier to ask for help. Having options and freedom in their learning was perceived to be a strong source of motivation, as was being allowed to work creatively with easily accessible apps. The device was described by parents as being easier to use than computers, and saving pupils’ time spent on homework:

- It can be used so creatively that homework that could be boring, is more interesting...she can sit down and make a movie. The school encourages them to do it how they want to do it so I think that helps her because she can be creative. It’s in all sorts of subjects. She likes the flexibility.
  - Mother, Honywood Community Science School

- Time saving...and for the last 2 years I couldn’t get him to read a book. Now he loves reading on his iPad.
  - Year 6 Mother (with older son at Honywood)

Parents also thought the Tablet could function as an organisational tool which could motivate pupils. It allowed them to have everything in one place, and plan their time. With teachers being able to e-mail homework to pupils, rather than them having to remember to write it down, the all-in-one format that the Tablet offered was particularly beneficial for younger children:

- It feels like less of a chore for them.
  - Year 6 Mother, St.Peters (talking about older daughter at Honywood)

Some parents did however suggest that the distractions of games and chatting to friends might get in the way of children’s motivation to learn.

Parents at Alec Hunter were asked whether technology and the internet in general could motivate children to learn, and they largely felt it could. This was because children found using technology fun and easier than other methods of working. Although these parents acknowledged their children’s enjoyment of using technology for their schoolwork, some remained unsure of the quality of learning they derived from this:

- It’s fun...and they feel a lot more mature.
  - Mother, Alec Hunter Humanities College

- They can produce things that look fantastic and that pleases them...sometimes they’ll do a presentation in front of the whole class and everybody looks at it so they want to spend extra time and make it look really, really good...it enhances their work...and in all subjects it’s got a use.
  - Mother, Alec Hunter Humanities College
6.5 Pupils’ view of their motivation to learn

For many pupils using Tablets was motivating simply because it was fun and enjoyable, and a device they want to use, but this was also linked to variety and change. The introduction of the Tablet, as well as the changes to curriculum and lesson lengths in the schools, provided changes in their everyday school life, which in itself was a source of positive change and greater motivation:

When we changed to using the iPad it was more interesting...and it motivated me...it was like change and got me interested again.  - Year 11 Girl, Honywood Community Science School

It’s more of a fun way of learning...more interactive...even when you’re typing, I find it more fun than writing...and you can do a video or something instead of writing. - Year 9 Boy, Honywood Community Science School

It’s a lot more interactive now with the iPads and it makes learning a lot more fun. - Year 9 Boy, Honywood Community Science School

It would motivate me by giving me loads of fun ways to be creative which makes it more interactive and more fun...it’s so much easier...like I quite like doing art and stuff. It’s quite easy because if you want to paint something you can just with the tap of a button have a paint brush and a pencil or something. - Year 9 Boy, Honywood Community Science School

Using the Tablet also gave pupils variety from one-dimensional school work and gave them many choices in how they learn and how they present their work. Because of its weight and size Tablets can be taken out of the classroom; access is instant and immediate, and pupils have options without having to wait for resources to be given to them, or wait for access to a shared computer.

It’s made me more wanting to learn...in Years 7 to 10 we had to look in books all the time or we had to wait to get in the computer room. Now in class you can go on the iPad and you can find things out... - Year 11 Girl, Honywood Community Science School

It really helps in your learning so you’re not stuck in the classroom all the time reading from books. - Year 7 Girl, Honywood Community Science School

My old PE teacher told me of an app that had the skeletal system on it so I felt more inclined to go and learn about that...because you could see it in 3D and it looked more interesting than having it in a book... - Year 11 Girl, Honywood Community Science School

In Maths you can do maths games, so you can take a break and play a few maths games...education games. - Year 7 Girl, Honywood Community Science School

You’re more active rather than just sitting there and copying from a text book. - Year 11 Boy, Honywood Community Science School

I’d lose interest because the iPad is a break from reading or writing...it’s a difference. It gets you refocused. - Year 11 Girl, Honywood Community Science School
The pupils were also motivated by the chance to work independently and appreciated the Tablet as a tool for this:

I think it’s a lot more self-motivated now we’ve got the iPads because we want to use them and it’s a lot more fun. You’re sort of doing it for yourself as well.

- Year 9 Girl, Honywood Community Science School

You can do it your own way with the apps...

- Year 11 Boy, Honywood Community Science School

You feel more in control of what you’re doing because like in English especially we get sent PowerPoint and stuff...and you can go through and read it at your own pace so you’re not having to sit through the teacher going through it on the board...you can go through it and ask questions when you’re ready so you’re more in control and have more independence with what you’re doing.

- Year 11, Girl, Honywood Community Science School

I feel more involved with what I’m supposed to be doing in lessons and I can work easier, better with an iPad than just a text book because you’re more involved and it’s faster to search.

- Year 9, Boy, Honywood Community Science School

Overall, pupils in the research appeared to feel inspired by their one-to-one device. Much of this was because they had instant access to the Internet, and could gather information quickly. The ability to be creative in the way they saved and presented their work, through the use of apps, compounded the sense that learning had become a source of enjoyment and satisfaction for many of them.
Chapter 7: Technology in Schools and Effects on Parental Engagement

This chapter discusses the views of non one-to-one Tablet using schools, and whether technology and one-to-one Tablets in schools can have an influence on parental engagement. There were some concerns expressed by parents about children’s use of digital technology, at home and at school, and a lack of information about digital technology available in schools. Schools using Tablets felt the need to inform and support parents in making the best use of the devices once introduced. There was also a clear need to keep teachers, parents and pupils fully informed, and reassured, about the benefits of Tablet learning, before such devices were introduced to the school.

7.1 Overview of digital technology in non Tablet schools

Teachers with no experience of one-to-one devices recognised that there were considerable benefits in using digital technology in lessons, and that more technology was a positive idea. They did however express concerns about a lack of training and a lack of familiarity with technology among some teaching colleagues. Some teachers commented on pupils’ inability to concentrate on their schoolwork when using computers.

We sought the views of teachers, parents and pupils at the school that generously agree to be our ‘control’ school, Alec Hunter Humanities College, Braintree, Essex which had introduced 32 iPad2 Tablets into the school with the specific objective of increasing parental engagement in the school and in pupil’s learning. The school is typical of most schools in the UK in that in addition to the thirty-two Tablets, it has a total of 433 computers. There are eight dedicated ICT spaces, one of which is the library, each with between 20 and 30 computers, plus several other classrooms with just a few computers available for research. Each classroom also has a desktop for the teacher to use, but teachers tend to allow students to use these when appropriate. Teachers were positive about the notion of one-to-one devices, and were already using digital technology in their lessons when possible.

7.2 Teachers

Teachers at the control school acknowledged that technology was a useful tool in supporting learning. Tablets in particular were cited as having an edge over PCs, for their fast start-up speed, and the possibility for pupils to access knowledge quickly:

When you take them to the computer room...they’ve got to turn them on, wait for them to boot up, they’ve then got to log in...that five minutes they’re already starting to lose attention. With the iPad you press the button and it’s on straight away. There’s no messing about.

- Teacher, Alec Hunter Humanities College

The internet also offered the potential to access information which was more up to date than a text book:
In my subject - Business...if I buy a text book it’s already out of date. I like to teach with what’s in the news this week and what’s going on. I can do that because of the internet...I try to pick up lots of examples and I can show adverts through You Tube and I can access BBC.
   - Teacher, Alec Hunter Humanities College

In terms of parental engagement it did not seem that technology at the school had much of an impact. Whilst pupils could email teachers through the virtual learning environment, which had the potential to extend engagement into the home, this was not always widely used:

[re: virtual learning] I think it’s a bit underused and we don’t know how to use it to its full capabilities. It’s good. We can put their homework up there...
   - Teacher, Alec Hunter Humanities College

7.3 Parents

Parents at the control school spoke about a variety of digital technologies being present at home, and it was clear that many pupils were already familiar with using such technology at home. There was little awareness of the way in which technology was being applied at the school because like most schools this had not been a particular priority in terms of communicating with parents. Whilst some parents did acknowledge the positive benefits of technology in schools there did not seem to be a desire for more parental engagement through technology. This could be because parents seemed generally unaware of the potential of technology in schools, or it could be a reflection of some of the concerns parents have about their child’s widespread use of digital technology (see Chapter 2, page 19). Parents in non-Tablet schools were sceptical of skills associated with digital technology replacing more traditional skills (such as writing and reading books), and questioned the quality of learning that could be had from one-to-one devices. In particular the internet was thought to provide answers too easily and not provide pupils with sufficient challenges. Parents also feared breakages of devices such as Tablets, and the cost implication for parents of this happening.

7.4 Pupils

Pupils at the control school (Alec Hunter) were making use of technology but this tended to be structured lessons in the computer suites. Whilst iPads were occasionally used by some groups, the limited number restricted their widespread use. The blocking of certain websites also seemed to discourage some pupils from having engagement with the possibility of using the internet at school, although it must be pointed out that blocking was done by the school to encourage ‘responsible use’ (e.g. not using games).

If Miss sets tasks, or quizzes, then we’ll use the Internet.
   - Year 11 boy, Alec Hunter Community College, Braintree

All the GCSE students have taken over (the computers).
   - Year 9 girl, Alec Hunter Community College, Braintree
They do like Media Studies and stuff, so they use the computer all the time.
- Year 9 girl, Alec Hunter Community College, Braintree

It’s (the internet’s) mainly for homework really.
- Year 11 boy, Alec Hunter Community College, Braintree

I’ve only used (an iPad) once, and that was in Maths – we did some maths games.
Year 11 boy, Alec Hunter Community College, Braintree

It makes it look like you’re a better school.
Year 11 girl, Alec Hunter Community College, Braintree

7.5 Parental knowledge of digital technology

The three Tablet schools in the research were aware that parents do not necessarily have a strong knowledge of technology or how it is used in schools, and dealt with this in different ways when they introduced the Tablets (see below, page 54). As the Tablets were personal to the child, and therefore meant for use at home as well as at school, the schools regarded it as essential to have parents’ understanding and support. Overall it seems that teachers are not convinced of parents’ knowledge of digital media. Family, Kids and Youth’s tracking survey, Digital Kids and Youth (see Chapter 9, page 63), showed that 89% of teachers thought that parents do not always know what their children are doing online. Interestingly, both parents and children disagreed with this, and felt parents supervised their children fairly well.

There is a difference in using and being confident about using the internet, and being confident about knowing how digital technology works, especially new devices and apps. The Digital Kids and Youth survey showed that nearly all parents (98%) go online every day and that nearly all claimed to feel very or fairly confident about using the internet. Children in the survey however thought they knew more about using digital technology than their parents, and this increased by age (56% of Year 6-8 pupils and 69% of Year 9-11 pupils).

Parents in the Tablets research expressed a lack of confidence in using new digital devices, and there was a sense that they might be left behind by their children. Several of the parents of Year 6 pupils about to start secondary school at Honywood, and therefore about to be introduced to one-to-one Tablets, expressed their concern about their lack of knowledge, because they would not be able to help with schoolwork.

I don’t know that she’ll be that willing to show me work on the iPad.
- Year 6 Mother, St. Andrews Primary School

I think another negative is parents not being able to keep up with kids’ use of technology ... You’ve got no control over their homework.
- Year 6 Mother, St. Andrews Primary School

Another Year 6 parent explained that going to an information meeting for parents about Tablets at Honywood taught her about the device and boosted her confidence in her son’s use of the device. In another parent group at Honywood there were notable differences in the parents’ level of
confidence and interest in digital technology, and this influenced their initial response to the introduction of Tablets:

I couldn’t teach my son what this school’s taught them regarding technology.
- Father, Honywood Community Science School

I was horrified…I don’t like the idea at all…I don’t really know why…I’m a bit of a technophobe to be honest. It was the whole idea of having this expensive piece of equipment provided and the fact that every child has one.
- Year 6 Mother, St. Peter’s Primary School

While parents of children at Honywood were now mostly comfortable with how their children were using the device, they reported that there still was a ‘fear of the new’ among parents who did not have children at the school and therefore did not know first-hand how they were being used.

7.6 The introduction of Tablets and parental engagement

At the schools using Tablets efforts had been made to engage parents, demonstrating the benefits of one-to-one Tablet learning. Many parents initially shared the concerns and fears expressed by those parents whose children were not using one-to-one devices (see chapter 2, page 19). It was found by the schools that these initial fears could be overcome through information meetings and occasionally working with individuals, or small groups of parents, to address specific problems or concerns. Apple and its ADE’s (Apple Distinguished Educators) had been supportive and helpful in these sessions, either as a presence at the meetings, or behind the scenes offering support to ICT support staff.

Engaging parents in the notion of one-to-one Tablet devices before they were introduced into the school played a vital part in the success of the schemes. If parents were engaged and supportive, children and teachers felt more comfortable about its use in school and at home. An added benefit was the engagement of parents who had previously not been so involved in the schools. It may the case that some parents feel disengaged from their children’s learning and with school, because of a poor relationship they had experienced with school and learning as children. The device appeared to offer a collective focus that was seen to be removed from education and learning, and yet giving teachers the opportunity to engage parents with their child’s learning and teaching.

At Honywood the introduction of Tablets played a part in the wider changes to pedagogy that the school had adopted (see chapter 4, page 33). The leadership team used the forum of open parent sessions to explain and address any parental questions or concerns:

We then had them in for a more formal talk and basically in that we went through the philosophy again and the detail of what we’re trying to do, and the level of engagement of year seven parents has been really, really positive, really strong and people are really pleased about it; what they’re seeing is, they’re seeing the happiness in learning (conveyed) by their children.
- , Head Teacher Honywood Community Science School

Transition from primary school to secondary school is recognised as a challenging time for parents and pupils. A parent at one of Honywood’s feeder primary schools, whose child was to enrol in
September 2012, described the information Honywood had put in place to support new arrivals in Year 7. This seemed to be a vital step to engage parents; support went beyond existing pupils and their parents, and initiated a climate of trust and support from parents, before the child had entered Year 7:

*I think it’s a wonderful school, and particularly with moving from Year 6 to Year 7, I think they handle the transition with [primary school] well... they do it in collaboration. They do a lot of days up there... since the children were very young, they’ve been used to going up to Honywood... and they increase the contact and exposure to the school... and when they start in Year 7 they have the whole morning to themselves to get used to it.*  

- Year 6 Mother, St.Peter’s Primary School

At Longfield a similar approach was taken to Honywood. In addition to information meetings for the new intake the school hosted parent evenings with all parents to discuss the introduction of Tablets. The event was hosted by the ICT leadership at the school as well as representatives from the e-Learning Foundation. Parents were also able to communicate their questions via text message in order to ensure that everyone was heard.

Similarly, Wallace High School, Belfast, hosted several parent evenings, following up concerns that might have been raised, and discussing in particular how parents might manage the Tablet at home with their children. Parents were encouraged to become involved with what their children were doing in their learning. At each Tablet school, some parents were initially fearful of the introduction of the Tablet, and therefore needed to be informed about the changes involved in the introduction of one-to-one Tablets in the school. Following these meetings, and open discussions with smaller groups of parents with specific concerns, the school leadership felt the benefit:

*We’ve definitely got closer to our parents, educationally .. And parents are more likely, therefore, to criticise, to have opinions, but I don’t see that as a bad thing. Rather than having this kind of distance between the parent and the school we talk about building relationships with parents. We’ve all had (parents) in development plans for the last decade but actually, I don’t know whether we’ve done an awful lot there really, but this definitely has changed that dynamic.*  

- Principal, Wallace High School

The school also believed that the fact that parents were paying for the devices was a motivator for increased parental engagement. This was because parents had a greater sense of ownership in the process, and were more inclined to actively discuss the use of technology if they were directly contributing towards it.
Chapter 8: Other benefits of the Tablet device

The introduction of Tablets into the three schools reviewed in this study had had some unexpected additional benefits. Using the Tablets at home ensured access to the internet at any time for children who had previously had to share devices; this increased access was however a source of concern for some parents. In schools, access to the internet allowed a much more personal and portable use of resources. The perception of being at the cutting-edge of technology, or at the point of pedagogical change was evident amongst parents and teachers. The benefit of the device was that it was touch screen, fast, with instant access to the internet, all of which appeared to be particularly advantageous to pupils with Special Educational Needs.

While some of the benefits might have been predicted, it was only through experiencing the change that was brought about by the one-to-one device both in school and in home that the additional advantages of the Tablet became apparent.

8.1 Use of the internet at home

Most pupils were taking their device home, and this had unexpected benefits. Parents could engage with the device, and were aware of their child’s schoolwork, which reassured them. While parents feel close to their child’s school in primary school, once a child begins secondary school the link can become weaker. A child is far more likely to travel to and from school independently, and there is an expectation that by Year 7 a child is able to take instruction for homework and become more independent in their learning. The gap between home and school widens, and parents can feel somewhat removed from what their child is doing and learning at school. The Tablet enabled parents to observe and admire their child’s creative work, read emails sent to and from teachers, and engage in the exciting opportunities that Tablet learning offered. Most parents were enthusiastic about the options available on the Tablet, and children were pleased to demonstrate their new-found skills to their parents. Parents spoke of the Tablet being brought to the breakfast table, with their child excitedly showing them their work that had been prepared for an exhibition, or workshop, often in collaboration with peers. Parents admitted that they had not expected this increased understanding of what was happening at school to take place, nor did they expect to learn more about the digital device themselves. Instead they admitted to having had initial fears about the device and the threat to their child’s safety from the possibility of cyber bullying, adult websites and the playing of games. These fears had however mostly been unfounded as the child became used to having the device at home:

*When she first got it, it had every game on...but as it’s been used more in a work based situation, she’s realised it hasn’t got all the memory capacity for all the games she’d like so the games have all gone which is great.*

- Mother, Honeywood Community Science School

Parents did however admit to facing challenges posed by the ready access that Tablets offered which included mobile gaming and continued access to the internet. A key issue was the amount of time that children spent on the devices at home:
My son uses it an awful lot which I do get concerned about…I think I need to extract him away from it.  

- Mother, Honywood Community Science School

When they’re spending 5 or 6 hours of an evening just chatting…Face timing their friends…you think ‘you’ve spent all day with them, are you actually going to come and talk to us?’…In some respects it’s making them more anti-social around the house.  

- Mother, Honywood Community Science School

Parents dealt with this by controlling or restricting the use of the Tablet, and this was a source of tension between parents and children in some cases, but it should be noted that other electronic devices such as games consoles posed similar problems. Parents need to set boundaries to restrict the amount of time spent online at home, and it is useful if the schools encourage and assist parents in this.

It’s a great tool and it can be used in fantastic ways, but there are times when I’ve said no, it’s going away…they could be on it all the time playing games.  

- Mother, Honywood Community Science School

We have to limit him to how much time he has a day on it because he’ll go into his bedroom and stay in there all evening if we allow him to…I will take the iPad away from him…he’ll have 2 hours if he’s done all his homework. But by taking it away, he feels I’m disciplining him so our relationship I think has worsened because of it…as soon as he’s off his iPad he’ll go on his Xbox…so I don’t think it’s specifically a problem with the iPad…he’d be like that with anything.  

- Mother, Honywood Community Science School

He can’t take the iPad upstairs…it stays downstairs. He can’t have it in his room at night. I’m worried he’d be on it all night and won’t sleep...  

- Mother, Honywood Community Science School

The increased independence and autonomy that having a one-to-one device at home brought to pupils was particularly significant. While most children in the research has access to the internet at home, many had previously had to share devices with other siblings or parents, and it was not possible to have unlimited access when completing school and homework tasks:

The good thing is it kind of helps your learning. So if you have someone else on your computer at your home or something, you can just go on that because it’s yours and it’s easier.  

- Year 8 Girl, Honywood Community Science School

8.2 Instant access at school

The possibility of having instant access to the internet at school was a strong benefit as it allowed pupils to escape the usual prescribed time and place of accessing the internet through the computer suites:

You could do it before…but you’d have to go onto the computer and go onto the Honywood website and sign in and go through all of that...now it’s a lot quicker. If you have 2 days to do a
piece of work, you can go on it, email your teacher and as soon as they get it they reply...

- Year 7 Girl, Honywood Community Science School

A teacher and SEN coordinator at Wallace High School also reflected on the value of having a private computer to work on, which was not located in a specific, open environment:

I think one of the very attractive things about the iPad is almost at one level the privacy of it because when you’re working in a traditional computer suite, you can see all the other screens and you can see, to some extent, if people are struggling a little bit, whereas the iPad is really quite private sort of experience but I certainly think that it encourages creativity.

- SEN coordinator, Wallace High School

8.3 The perception of being at the cutting edge of digital technology

While there were some teachers and parents that had concerns about adopting one-to-one Tablet devices there were equally those who expressed excitement about Tablets, believing that these were the future of technology and of education. This view was also expressed by teachers and parents at the ‘control’ school:

You have to look at this as the development of scraping on a piece of slate with metal to a pencil to a pen to the first keyboard...because this could be the next way ahead for how we all communicate. We’re at quite an early stage at the moment... These Tablets seem to be drawing everything together so perhaps so that’s the one device we do now need. It’s the next kid’s exercise book – the Tablet.

- Teacher, Alec Hunter Humanities College

Everything’s going to be on there. They won’t need a bag anymore. They’ll simply need the case that they carry their iPad or Tablets in because literally everything can be stored on there...If we’re behind the times by not bringing them into schools we’ll be fools.

- Teacher, Alec Hunter Humanities College

Some of these ideas and changes to pedagogy appeared to be happening at schools where one-to-one Tablets were in use:

...Never have I had a student come to me and say ‘have you seen this great science book, but now on a weekly basis, all sorts of students, and staff, come and say, ‘have you seen this app’, ‘have you done this’, ‘have a go at this’. This is really inspiring. When I was at school, we got the hand-me-down book and it was pot luck as to whether you got a really shabby old one or you got a really nice new one but actually it was always a second-hand text book. Now, we use one app, we might use it for a little bit but then actually we move on. You’re constantly revising and innovating with the help of the students, rather than saying, well, this is the textbook we can afford this year, it’s four years out of date but actually we’re going to have to go with it...

- Vice Principal, Matisse College, Longfield Academy

This excitement and engagement with the new pedagogical model that was being established was reflected in all the Tablet schools, and there was a strong sense amongst teachers, pupils and parents that they were at the heart of an exciting digital revolution that could only enhance
children’s lives, and make the experience of learning, and teaching, more satisfying and more engaging.

I think the school has done the right thing in terms of introducing iPads, because children can’t be playing catch-up with where the latest technology is, because what they’re going to face when they’re out in the workplace is beyond what we can imagine now.

- Father, Honywood Community Science School

Their use of technology is only going to increase with their life and work, and so them being comfortable with technology and confident in their skills going forward can only be a good thing.

- Father, Honywood Community Science School

They’re going to be prepared for a world that’s ever changing.

- Mother, Honywood Community Science School

8.4 The benefits of touch screen technology

Tablet devices are becoming increasingly popular in the educational sector across the globe (see Chapter 10, page 70). It is worth examining why touch-screen devices are so popular compared to other technologies and the possible benefits of this to schools. One important factor is the growing use of touch screen Tablets outside the educational sector. While more devices are likely to come onto the market that combine the benefits of touch screen with the benefits of Tablets, the use of laptops in schools are, in comparison to Tablet, perceived to be slow to load and quite cumbersome.

Another important aspect is cost. Tablets are significantly cheaper than laptops and desktop computers, and being personal and portable can potentially reduce the cost of resources in terms of school space significantly. The schools appeared to have fewer problems with Tablets in terms of software and crashes compared to PCs and laptops, saving ICT departments not only cost but also administration and time. Tablet schools were beginning to calculate savings in these aspects as well as printing costs, textbooks and equipment.

The fact that Tablets are more portable than laptops mean that pupils can easily take the device with them, allowing them to share and collaborate with each other. Children were observed to take great care of their device, personalising them with individual covers, screensavers, and personal apps. This was necessary also for identifying the devices.

Touch screen devices appear to have a more intuitive interface compared to PCs and laptops, and in the leaders’ and teachers’ opinion this was making it easier for both pupils and teachers to learn how to use the device. Pupils who had previously not been engaged by technology were finding the Tablet much easier to use and were happy to use them for their schoolwork. The popularity of smartphones and Tablets also meant that both adults and children were likely to be familiar already with using a touch screen device. Teachers explained that touch screen, and the way applications were designed, made it easy for young people to be creative, and that they were engaged by producing visually impressive material. In the classes observed at Honywood Year 7 pupils were making stop motion animations, films, sketchbooks, mind-maps and 3D scenes for a detective story, all with great ease.
8.5 Benefits to children with SEN (Special Educational Needs)

It has been recognised for some time that children with SEN benefit from using technology in their education. Technology has been shown to increase autonomy, improve communication and promote inclusion and confidence in such children. For those who struggle with their handwriting, which can be a problem across different disabilities, typing notes and messages is often easier and less time consuming than writing by hand. Software transporting text to speech and vice versa, as well as spelling checks, has also been very successful for children with reading and writing difficulties. It also means that such children can easily store and review material later on. All of this has been available through other technology, but its availability through a one-to-one Tablet device (both iOS and Android) appears to be particularly beneficial. Interviews were carried out with SEN coordinators and classroom assistants, as well as leadership in the schools, and a consistent picture emerged of the benefits of the Tablet for SEN children.

It’s been in the literature for a long time with special educational needs that ICT is empowering for young people and they like it and it has the opportunity of correction. When you’re laboriously doing things by hand and especially if your handwriting is messy, which is true of many dyspraxics, (and) it’s actually true of many children with ADHD in my experience.

- SEN coordinator, Wallace High School

The benefits of the Tablet for these children may be explained through three important factors: the touch screen interface; its portable nature; the fact that it is a personal device. For children with learning difficulties the intuitive interface gave them greater control over what they are working with, for example through increasing the font size or the background lighting.

It’s easier to look at and control. Sometimes the words in a book are too small so with books on the iPad I zoom in more...

- Year 9 Boy, Honywood Community Science School

SEN children have been known to benefit from multi-sensory technology and the Tablet device is multi-sensory and multi-touch. The Tablet is more cost-effective, light and robust compared to other assistive technologies, and it allows instant response and instant cause and effect; an important aspect for many SEN children. SEN coordinators and teachers reported that having the Tablet as a personal device has benefited SEN children as a tool for communication and organising their schooldays. Pupils who would previously struggle to keep control over homework, messages from teachers and lesson material could now have everything sent to them by e-mail and store and access such information in one place on their portable device. The use of e-mail between pupil-teacher also made it easier to keep parents of SEN children informed of their progress, and of what they had been asked to do.

One of the main benefits for SEN children of using Tablets however is that it offers variety, and enables those who might struggle with traditional ways of working a greater choice of options to

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overcome their learning challenges. These include a wide variety of audio, visual and kinaesthetic styles, and applications that support specific difficulties such as dyslexia, without a teacher having to book resources. SEN children find the device easy to use and this builds confidence which they take with them into other tasks.

How can I access the information? I can read it, I can write down, I can listen to it, I can speak to other people about it, I can film it and have a look – I can have a choice. Breaking those barriers down has given those youngsters the confidence, and has helped them progress.

- Teacher, Honywood Community Science School

My son is using Dragon, which is an app you can dictate into, because he can’t spell; he can now do his work independently, without coming down to me saying ‘Mum I can’t spell this’, because he can’t even use a dictionary

- Mother, Honywood Community Science School

Children who struggle with their writing skills, or their organizational ability, memory skills – all those types of things – this has enabled kids who perhaps would have felt so out of the loop before, to actually feel like ‘Yeah, I can do this’

- Teacher, Honywood Community Science School

One of the specialists interviewed spoke of the way in which SEN children often struggle to retain concentration, and argued that it is therefore important to have as few distracting elements on the screen as possible. Free apps containing advertisements are a particular problem for this group, as children will tend to find them distracting and click on them. As the benefits of Tablets to SEN children are recognised, and especially those children with severe difficulties such as autism, a greater number of apps are being designed to meet their particular needs, focusing on areas such as social stories and communication.

The Tablet can allow children with learning difficulties visual, non-linear, and simple ways of organising their material, such as mind-mapping applications. Whereas on a piece of paper a child might struggle to visually plan and organise their thoughts, and become more confused, the intuitive touch screen interface potentially makes this much easier and visually satisfying. Mind-mapping and keyword facilities are some of the ways in which Tablets remove pupils’ barriers to accessing content and presenting and communicating their work.

A key element to the success of the iPad for SEN children is the simplicity of its interface. This means that these children, who are used to struggling and falling behind their peers, can now use the same device and the same apps as other pupils with minimum help. They can also easily personalise their content which is an empowering experience for many who have never experienced independent learning before.

[Pupil] is so content at times when in the day she might have been bored, might have been frustrated.. there’s far more content now that she has that, and intuitively she uses it. Hasn’t been taught, hasn’t had any training to use it. Literally can just use it. She’s quite happy to show me things on it whereas before when I’d walk through the LRC, she’d engage with me but she wouldn’t want to talk to me about what she was doing whereas now she will and that’s interesting, that level of engagement.

- Deputy Head Teacher, Honywood Community Science School

All Tablet school teachers and leaders spoke of the sense of pride and increased self-esteem felt by SEN children because they were using and working on the same device as others; they did not feel
different from their peers in the way they had previously. As one SEN coordinator explained, such children had of necessity often been publically separated from other pupils in order to undertake different tasks, which had inevitably led to feelings of isolation, and low self-worth. Using the same device as everyone else and being allowed to be more independent, in ways that work for them, was seen to be increasing confidence and wellbeing among many of these pupils. Another SEN coordinator summed up this benefit to SEN children:

*It puts them on a more level playing field.*  
- SEN Coordinator, Wallace High School
Chapter 9: Overall attitude to the introduction of one-to-one Tablet learning: the quantitative research

To assess the overall response of teachers, parents and children to the notion of giving every child in secondary school a one-to-one Tablet in secondary school, research questions were added to Family Kids and Youth’s syndicated digital research survey. Digital Kids and Youth is a 6-monthly syndicated research study carried out in the UK amongst parents, children and teachers by Family Kids and Youth. The questionnaire is designed and written by Family Kids and Youth with the agreement of syndicate partners.

The overall objectives of the research were to assess the most up to date picture of digital engagement amongst families and children aged 3-16 in the UK. Questions are designed to produce both tracking data, and to assess changes in technology, such as the introduction of Tablets and smartphones. Research methodology is carried out online using a nationally representative UK panel. Data is weighted to be representative of parents and children in the UK by social class and region. For an outline of the questions and full details of the sample see Appendix 1, Page78.

9.1 Teachers’ view

The quantitative research indicates a high level of acceptance of the notion of one-to-one Tablets in secondary school amongst teachers. Three-quarters (74%) of teachers interviewed are in favour of giving one-to-one Tablets to pupils in secondary school. A proportion of teachers are already using Tablets themselves, with one in five (21%) teachers saying they personally use a Tablet and half of these (10% of all teachers) currently using their Tablet computer at least occasionally to help with their teaching.

Figure 1: Support for Tablets in school: teachers
Many teachers felt that Tablet teaching and learning would benefit their teaching:

**Figure 2: Benefits of using Tablets in teaching: teachers**

![Image of survey results showing benefits of using Tablets in teaching]

However, the current use of Tablets in school is low:

**Figure 3: Teachers’ current use of Tablets in school**

![Image of survey results showing low use of Tablets in schools]

Some teachers did have some practical concerns about the introduction of Tablets in school, such as safety, security and their own lack of knowledge about how to use Tablet computers.
WiFi appears to be available in many schools, with 91% of secondary schools having Wi-Fi (82% in primary schools). But speed may be an issue, with only 1 in 4 saying the speed is fast, 58% medium and 11% slow.

However nearly half of teachers at secondary schools said that their schools allowed mobile phones to be brought into the school, so the notion of mobile devices in school appears to be acceptable in many schools:

Figure 5: The use of mobile phones in school: teachers

While some teachers are worried about their own lack of knowledge of digital devices, they accept that digital technology and the internet can help them in their teaching. Concerns centred on pupils’ knowledge being greater their own, and lack of training; nearly three-quarters of teachers in the research would welcome more training about how they can enhance their teaching through digital technology:
- 1 in 4 – ‘worry about my lack of knowledge about digital technology in my job’ - (25% agree)
- 1 in 3 (34%) ‘feel as though changes in digital technology are happening too fast for me to keep up’ – especially Primary School teachers – (40% vs 28% secondary)
- Most (72%) agree – ‘I would like to learn more about enhancing my teaching through digital technology’
- But very few (6%) – ‘tend not to use digital technology much because I know the students already know more than me’

Despite these misgivings however, it is important to point out that most teachers are very much in favour of using digital technology to help with their teaching:

**Figure 6: Teachers’ attitude to using the internet and digital technology to enhance learning**

![Teachers' attitude to using the internet and digital technology to enhance learning](image)

And the majority of teachers are already using digital technology to enhance their teaching:

**Figure 7: Current use of digital technology to enhance teaching**

![Current use of digital technology to enhance teaching](image)
9.2 Parents’ and children’s view

The vast majority of parents and teachers are in favour of the notion of one-to-one Tablets in secondary school.

Figure 8: Would you be in favour or against the idea of secondary schools in this country giving all children their own Tablet computer?

While parents thought that one-to-one Tablets would help pupils with their learning, some parents expressed concern about damage, safety and loss of the Tablet.

Figure 9 Mixed parental views of one-to-one Tablets

There was some disquiet expressed by parents that the use of one-to-one Tablets might ‘normalise’ the Internet. There was also concern about cost, and whether this concept would be a wise use of school funds.
Children in the quantitative survey tended to mirror parents’ concerns about safety, damage and the effectiveness of firewalls.

**Figure 10: Use of school funds and normalising the internet**

<table>
<thead>
<tr>
<th>Statement</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>There are much better things for schools to spend money on than giving tablets to children</td>
<td>3.36</td>
</tr>
<tr>
<td>I would be really concerned that it just normalises the internet and that it will encourage my child to be online even more when I would prefer them to be doing other things</td>
<td>3.14</td>
</tr>
</tbody>
</table>

**Figure 11: Children’s view of one-to-one Tablets**

**Children mirror parental support and concerns about damages and firewall abuse**

<table>
<thead>
<tr>
<th>Statement</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>It’s a fantastic idea and a great way to help me learn more</td>
<td>4.16</td>
</tr>
<tr>
<td>I would be really worried that I would lose it or damage it and that my parents would have to pay to replace it</td>
<td>3.40</td>
</tr>
<tr>
<td>I know children who would get around the firewalls and would use it for lots of other things other than just schoolwork</td>
<td>3.40</td>
</tr>
</tbody>
</table>

It would seem therefore that before widespread adoption of one-to-one Tablets in secondary schools is accepted by teachers, parents and pupils, some of these concerns need to be addressed, and the experience of schools currently using Tablets will help considerably with this. It is notable however that overall there is acceptance of the notion of one-to-one Tablet teaching and learning, and although teachers express a wish for more training, it appears that with reassurances about training, cost benefits, and safety, the teaching profession, parents and pupils are likely to view such a move positively.
Chapter 10: The Global Picture of One-to-One Tablet Devices

The first step to assess the case for one-to-one Tablets in schools was to review the global picture of the adoption of Tablets in schools. Our initial research (September 2011) showed that many countries were trialling the use of Tablets in schools. A report\(^8\) in the US found that most US schools were testing Tablet devices. Emerging economies in Asia and Eastern Europe had announced the adoption of Tablets in schools, including South Korea, India, Kazakhstan and Turkey. Our search also established that trials had already begun to explore the benefits for children’s learning through the use of Tablets in France, Japan, Singapore and Australia. This chapter summarises the UK and the global picture in the summer 2012. The picture is continually changing however, and this will continue to be monitored by the research team.

10.1 The UK picture

Since the initial exploration into the use of Tablets in the UK education system took place (September 2011), more and more schools and local authorities have been and continue to be looking into the use of Tablet devices. For example, at the beginning of the last academic year, Mounts Bay Academy in Penzance spent £100,000 on iPads for all of its 900 students, becoming the first school in Cornwall to invest such an amount in computer Tablets.\(^9\)

Local authorities are also looking into developing mass programmes for Tablet computers or becoming a technology hub for their local area, such as Wandsworth CLC which is an Apple Regional Training Centre. Additionally, in July 2012, Cardiff Council announced that starting in the 2012-13 academic year, Cardiff schools are to be given high speed wireless internet and Tablet devices for every pupil to be able to use as part of a £3m project aimed at updating teaching methods. Both primary and secondary schools in the city will be receiving the Tablet from September, although the exact number to go to each school is not yet known, and may not include one-to-one devices. As part of the project parents will also be offered the chance to buy Tablets through the school.\(^10\) Norfolk County Council is undergoing a similar technology project. After completing a successful Android Tablet trial as well as a pilot of a new Google VLE in a number of primary and special schools (which began in May 2011), the council is continuing its new ICT strategy by rolling out a bring-your-own-device (BYOD) scheme.\(^11\)

On a national level, in May 2012, Cabinet Secretary for Education in Scotland, Michael Russell, announced that the potential for mobile devices (including Tablet computers) to enhance learning in Scottish schools is to be explored by Education Scotland. 10 local authorities, almost 20 schools and hundreds of students are already using a variety of personal devices, including the use of Android

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\(^8\) Piper Jaffray. Tablets in the Classroom. October, 2011. US.


Tablets at Morgan Academy in Dundee and iPads at Sciennes Primary School in Edinburgh. Russell said:

“I want Scottish school pupils to be both connected and collaborative and I want to see digital technology being used purposefully both in and out of school.....The range of mobile devices that are now available and the promise of what they can bring to teaching and learning is very exciting and something that must be embraced”.12

10.2 Global Tablet trials

The use of various technologies within schools is not a new occurrence, with many schools globally using laptops and netbooks currently. However, the use of Tablets is changing the use of technology, with many of the concerns regarding the use of laptops and netbooks, such as their weight, battery life and time taken to load, being eradicated with the use of Tablet technology. Additional features, such as a touch screen, built in easy to use camera, and voice recognition, are additional features that make the Tablet a superior educational tool and have helped lead to its widespread adoption.

The implementation of Tablets in schools appears to have been led by the US where the use of the iPad is prevalent. At a media event in October 2011, Apple noted that nearly 1,000 K-12 schools had an iPad one-to-one programme and that more than 2,300 K-12 school districts in the United States were running iPad programmes for students or faculty.13 A survey carried out in November 2011 by Piper Jaffray analyst Gene Munster confirmed that all US districts are in the process of testing or using iPads, and most districts indicated that they expect Tablets could outnumber computers in education within five years. New York’s ‘School of One’ has taken the use of Tablets and other personal devices in education one step further, analysing each child on a discrete level and then tailoring the method, technological tools used and speed of learning to meet their individual needs.14

Trials of Tablets are also being undertaken in Europe. For example, Acer is in the process of carrying out a Tablet pilot trial with schools in Estonia, France, Germany, Italy, Portugal, Spain, Turkey, and the United Kingdom participating. Following the Netbook Pilot (academic year 2010-2011), an objective of the study is to look further into one-to-one pedagogy. As well as this it aims to identify best practices on Tablet use from the participating schools, to provide example case studies for new schools considering implementing Tablets, and to examine key factors for successful integration of this technology into schools on a larger scale. The French government, alongside participating in the original Acer trial, has begun its own trial in the last academic year in the district of Correze, distributing 3,300 Tablets to students in the area. Turkey is also looking in-depth into the use of Tablets for educational purposes. The country is currently undergoing the initial trial stages of the “Movement of Enhancing Opportunities and Improving Technology” (FATIH) project, which began in February 2012 and involves the test trial of Tablet PCs provided by General Mobile in 52 schools. A trail that is to be run over four years, it is amongst the most significant educational investment

12 http://www.scotland.gov.uk/News/Releases/2012/05/school-Tablets-piloting16052012
14 http://schoolofone.org/concept.html
Turkey has made costing USD 3-4bn. The aim of the project is to equip 42,000 schools and 20,000 classes with the latest information technologies, resulting in a total of 16 million students receiving Tablets.15

There has also been a focus on Tablet devices in Scandinavia in recent years. In a municipality outside Stockholm, Sweden, Primary schools have replaced physical books with Tablets16, and throughout the rest of the country many smaller trials are being carried out. In Norway, Secondary schools as well as Primary schools are trialling Tablets, however mostly in smaller numbers. A visit was made to the national ICT conference in Norway by the FK&Y research team. At this it was demonstrated that there was considerable interest in Tablet devices, and representatives from schools using Tablets reported an increase in motivation and communication, as well as attainment in reading and writing. Denmark appears to be the only Scandinavian country with a national policy for mobile learning. The new strategy dictates that all pupils must have access to sufficient wi-fi in their classroom by 2014, to facilitate a national bring-your-own-device policy17. The government has also opened an ‘App store’ for downloading educational content for smart phones and Tablets.

The use of Tablets in education is not something that has been confined to the West. In Australia, the states of Queensland, Victoria and New South Wales are each looking into the use of Tablets in their education system. As part of the ‘Smart Classrooms Strategy 2011-2014’, the Queensland Department of Education and Training undertook an iPad trial in the 2010-2011 academic year at Doomadgee State School and Kedron State High School. Also in the last academic year, the Sydney-based schools of New South Wales Higher School and Shore School began Tablet trials, and the State of Victoria ran its own trial sharing 700 Tablets amongst 10 schools and carrying out a research programme to monitor their use.

In South Korea schools have been testing the use of Tablets for some time, with Wi-fi zones and ‘digital textbooks’ being tested in schools for the last 5 years. The South Korean Ministry of Education announced in June 2012 that it will replace textbooks and all paper in its schools with Tablets by 2015, increase online classes so students can continue their studies outside of school and deliver the entire school curriculum through a cloud-based system. This project is expected to cost approximately USD 2.4bn. Japan’s ‘The Future School’ scheme, which started in October 2010, has seen its Ministry of Internal Affairs and Communications give Tablets to more than 3,000 pupils under the age of 12 at ten elementary schools. In Singapore a trial has been carried out at Nanyang Girls’ High School where 120 pupils and 16 teachers were given iPads. The Education Ministry proposes to give every child in the school an iPad by 2013 and is providing schools with grants to purchase Tablets, software and services. As a result of this, many schools in Singapore have quickly adopted Tablets. Private Schools in Dubai are also starting to consider Tablets in education as a viable option, particularly given the popularity of their usage at home. The Jumeirah English Speaking School (JESS) recently had a pilot scheme for Year 4 students of the Jumeirah branch.18

15 http://fatihproject.com/?p=9
16 http://www.svt.se/2.22620/1.2693849/sufplattor_ersatter_skolbocker_i_sollentuna
17 Hylén, Jan (2012), Turning on Mobile Learning in Europe: Illustrative Initiatives and Policy Implications, Paris, UNESCO.
Other countries are looking at Tablets to improve educational standards. Thailand, in a bid to improve its falling educational attainment, has been hoping to implement the new Prime Minister, Yingluck Shinawatra’s, “One Tablet per Child” campaign pledge. In May 2012, a contract was signed with Shenzhen Scope Scientific Development, a Chinese firm, for the provision of 400,000 Tablets and in June the first batch was delivered to pupils. Encouraged by the initiative in Thailand, Brunei’s Ministry of Education announced in February 2012 that it is exploring the use of Tablets in the education system. Representatives from e-Hijrah OPM delivered a presentation of a six year plan to introduce ICT into Brunei’s education system.

The Tablet is also considered for sustainability and to help developing countries. In India, a trial has been carried out with the iSlate device (developed in Singapore) that uses solar power. In March 2012 it was announced that some 50,000 of these devices, each costing about US$ 45, will be used by 10- to 13-year-old pupils over the next three years in Mahabubnagar District in Andhra Pradesh. Zimbabwe is also implementing a scheme with a focus on solar powered Tablets.

Another country considering implementing a bespoke Tablet rather than buying consumer Tablets is Russia. A Russian state company Rusnano has developed a plastic-based Tablet computer designed to compete with Apple’s iPad in the education sector both in Russia and abroad. In addition to this, during the 2010-2011 academic year another Russian entrepreneur, Alexander Evgenievich Shustorovich, ran a trial where approximately 300 year-six pupils from 11 schools in cities across Russia were loaned a portable hybrid e-book and Tablet computer with which to learn, do their homework, revise for exams and order lunch from the school cafeteria.19

Although Tablets are considered to be a key learning tool, in many countries the devices are not expected or intended to entirely replace books for learning. In Central Asia, Kazakhstan has announced that by 2020, the state will purchase 83,000 Tablets for schools. However in this instance the objective is not to fully digitalise learning, but Tablets will be used alongside more traditional learning methods. This is because the major aims of the reform are to improve the quality of education, to solve the issue of a lack of professional teaching personnel in the remote and rural villages, and to provide education to children with disabilities and limited access to formal education.20

Finally, one-to-one schemes are also being run in countries such as Argentina and Uruguay, however, these schemes are being undertaken using specialised netbooks rather than Tablets.21

19 http://www.wired.co.uk/magazine/archive/2012/03/features/classroom-disruptor?page=all
21 http://blog.eboardsolutions.com/leadership/what-can-we-learn-from-south-america/
Chapter 11: Conclusions

This study has drawn on the experiences of leadership, teachers, parents and pupils at schools supporting one-to-one access to Tablet computers. Three secondary schools across the United Kingdom were identified; Honywood Community Science School in Essex, Longfield Academy in Kent and Wallace High School in Belfast, Northern Ireland. Observations and interviews were carried out at all three schools, while Honywood remained the main focus of the research. Focus groups with teachers, parents and pupils in Year 7, Year 9 and Year 11 were carried out, alongside focus groups with the same groups in Alec Hunter Humanities College, a nearby secondary school with a different take-up of technology, and few Tablets. Focus groups with teachers, parents and Year 6 pupils from two local feed-schools were also included in the research. Quantitative research was carried out through the Digital Kids and Youth research, a nationally representative sample of teachers, parents and children across the UK.

11.1 Children’s perception of one-to-one Tablets

- It appears that pupils have greater motivation to learn; they respond well to interactive learning which they claim is more fun. They can be creative and the Tablets give the opportunity to have more variety in their school work.

- Children enjoy the collaborative nature of the Tablet; having feedback from their teacher is helpful, and makes them feel that teachers are assisting them in their learning.

- It seems that the classroom environment has improved; children claim that disruptive children are distracted by the Tablet and are more amenable as a result.

- Improvements to communication are very important; not only do pupils feel closer to their teachers and find it easier to ask for help, but their friends too are supportive.

- It is acknowledged that social media is important to children’s social life. The Tablet is creating a greater opportunity to form relationships; it is used for entertainment and communication outside school.

11.2 Parents’ perception of one-to-one Tablets

- Parents report greater motivation and engagement with schoolwork from their children since the introduction of Tablets.

- It is also noticeable that parents feel closer to the school and the Tablet generates interest and understanding of schoolwork in a way that previous homework could not.

- Parents admit to having had initial concerns over the cost of the devices, and potential breakages, as well as safety and theft; most are now impressed with the devices, and have gained trust in the school’s vision.
Some disquiet about home use remains however, predominantly concerns about excessive use and children never ‘switching off’; parents need help in setting boundaries for their children’s digital use at home.

Parents’ lack of confidence in technology can lead to a sense of losing control (but important to note that this problem is not exclusive to Tablets).

11.3 Teacher’s perception of one-to-one Tablets

- Teachers welcome the change to pedagogy. Teachers can offer more independence and choice; they can facilitate rather than instruct.

- Children who previously struggled with their schoolwork, and especially SEN children, are benefitting; teachers find it easier to monitor pupils’ progress, and to feedback immediately, thus keeping track of pupil progress.

- Teachers report differences between year groups; younger pupils are perceived to be experiencing the greatest benefits, although they may also need more support.

- Teacher confidence in using technology varies and most would like to have training in using the device before children receive their Tablets.

- There is a lack of curriculum based content, but teachers are finding innovative and creative ways of teaching with the Tablet.

- They are happy to share their ideas with other teachers.

11.4 The impact of Tablet learning and Tablet teaching

- It is notable that innovative leadership is a characteristic of Tablet schools.

- While there were some concerns around safety and security, this has not been a problem, but there have been between 5%-7% breakages; strong covers are essential.

- Children however love to personalise their device; this helps to identify ownership.

- Teachers were wary at first; there were expectations of them not being able to handle the technology, or that children would know more than them.

- The experience however is enjoyable, leading to greater creativity and innovation in teaching, and a sense that they are at the forefront of change.

- SEN children are benefitting from using one-to-one Tablet devices.

- Tablet teaching and learning is changing pedagogy – it is pupil-led and increases pupil autonomy and engagement with school work.
There is a sense of the democratisation of education taking place through the adoption of one-to-one Tablets in schools. Children from all backgrounds and levels of ability have an equal opportunity to access information and enjoy learning. This appealed especially to the leadership and teachers in the Tablet schools.

Collaborative learning is increasing through the use of the Tablet: pupil – teacher; teacher-teacher; pupil – pupil; parent – school.

The Tablet is used for information, but also to create content and produce work using film, picture, recording.

Apps are shared and pupils and teachers exchange recommendations – these are frequently listed in class, through newsletters, on the school website.

While there is a need for good educational content it may be that schools will begin to create their own content.


Chapter 12: Further Research

12.1 Research Plan September 2012 – 2013

The research 2011-12 looked at three Tablet schools, all of which were using iPads. For the current academic year, the research will include non-iPad schools, and schools in both rural and urban areas. In particular, in order to produce an effective and robust evaluation for September 2013, Family Kids and Youth will look further at some of the issues that have been highlighted in this research such as teacher training, change to pedagogy, pupil motivation to learn, content, and attainment.

As Tablets become cheaper, and more manufacturers produce high quality and portable devices that can be used by pupils at school and at home, it is believed that it is important to monitor their use in school and find out the effects of their use. While several trials have run in schools in the UK in the past five or six years with one-to-one devices (such as notebooks and laptops), infrastructure, cost and maintenance, and lack of teacher training has appeared to be a restrictive factor in their widespread adoption. Tablets, it seems, offer a faster, easier, cost effective and more manageable route to giving every child in secondary school access to the Internet at home and at school, and to the potential of providing the best educational content through each child having their own device.

The research September 2012 to September 2013 will therefore focus on three main areas:

1. Monitoring schools that have now been using Tablets for a full academic year, including Honywood, Wallace High School and Longfield Academy. Included in the research this year will be Cramlington Learning Village, Northumberland, which gave all Year 7 pupils Samsung Tablets in September 2011, and has repeated the exercise this year, so that Year 7 and Year 8 have one-to-one devices. This research will look at all year groups that are using one-to-one Tablets, and will include observation and interview.

2. Focus on Year 7 in schools that will be given Tablets by different manufacturers. Year 7 has been chosen as this is the transition year. The research will look at attitude before and after the introduction of Tablets into the school, and will include Year 7 teachers, parents and pupils.

3. The inclusion of new schools that have made the decision to adopt one-to-one Tablets in the current academic year (2012-2013). The research will look at the decision making process that was behind the decision to adopt one-to-one Tablets, and the way in which teachers are adapting to their use. The research will focus especially on Year 7, and will include Year 7 observation and interview.

In total it is proposed to include 9 schools, and the main research will begin in January 2013, with the time leading up to this spent on visiting the schools, talking to teachers, and sharing the existing research.
Appendices
Appendix 1: Research Methodology

1. Qualitative Research

Focus groups with pupils, parents and teachers were carried out at Honywood Community Science School, the main focus of this research, as well as at the ‘control’ school, Alec Hunter Humanities College, a nearby secondary school with a similar catchment area, and St. Andrew’s and St. Peter’s primary school, also within Honywood’s catchment area. In total 18 focus groups were held with pupils, teachers and parents.

Family Kids and Youth also carried out ethnographies, observing the impacts of Tablets on teaching and classroom interactions. Observation research was also carried out at Wallace High School, Belfast, and Longfield Academy, Kent. In the 3 Tablet using schools, in-depth interviews were held with the Head Teacher, Deputy Head, Head of IT, and the SEN coordinators at Honywood and Wallace High School. The full research schedule is listed below.

<table>
<thead>
<tr>
<th>Group</th>
<th>Date / time</th>
<th>Moderator</th>
</tr>
</thead>
<tbody>
<tr>
<td>Honywood Pupils Yr 11</td>
<td>Tuesday 24 April</td>
<td>Debby Konigsberg</td>
</tr>
<tr>
<td>Alec Hunter Pupils Yr 11</td>
<td>Friday 27 April</td>
<td>Martyn Richards</td>
</tr>
<tr>
<td>Honywood Pupils Yr 7</td>
<td>Thursday 26 April</td>
<td>Debby Konigsberg</td>
</tr>
<tr>
<td>Alec Hunter Pupils Yr 7</td>
<td>Friday 27 April</td>
<td>Martyn Richards</td>
</tr>
<tr>
<td>Honywood Pupils Yr 9</td>
<td>Thursday 26 April</td>
<td>Debby Konigsberg</td>
</tr>
<tr>
<td>Alec Hunter Pupils Yr 9</td>
<td>Friday 27 April</td>
<td>Martyn Richards</td>
</tr>
<tr>
<td>Honywood Parents</td>
<td>Thursday 26 April</td>
<td>Martyn Richards</td>
</tr>
<tr>
<td>Honywood Parents</td>
<td>Thursday 26 April</td>
<td>Debby Konigsberg</td>
</tr>
<tr>
<td>Honywood Teachers</td>
<td>Tuesday 1 May</td>
<td>Martyn Richards</td>
</tr>
<tr>
<td>Honywood Teachers</td>
<td>Tuesday 1 May</td>
<td>Martyn Richards</td>
</tr>
<tr>
<td>St. Peter Pupils Yr 6</td>
<td>Thursday 3 May</td>
<td>Debby Konigsberg</td>
</tr>
<tr>
<td>St. Andrew Pupils Yr 6</td>
<td>Thursday 3 May</td>
<td>Martyn Richards</td>
</tr>
<tr>
<td>St. Andrew Pupils Yr 6</td>
<td>Thursday 3 May</td>
<td>Siv Svanaes</td>
</tr>
<tr>
<td>St. Peter Parents Yr 6</td>
<td>Thursday 3 May</td>
<td>Debby Konigsberg</td>
</tr>
<tr>
<td>St Andrew Parents Yr 6</td>
<td>Thursday 3 May</td>
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<td>Thursday 17 May</td>
<td>Debby Konigsberg</td>
</tr>
<tr>
<td>Alec Hunter Parents Yr 7</td>
<td>Thursday 17 May</td>
<td>Debby Konigsberg</td>
</tr>
<tr>
<td>St. Andrew &amp; St. Peter Teachers</td>
<td>Thursday 31 May</td>
<td>Martyn Richards</td>
</tr>
<tr>
<td>Event Description</td>
<td>Date</td>
<td>Person(s)</td>
</tr>
<tr>
<td>-------------------------------------------------------</td>
<td>-----------------</td>
<td>-----------------</td>
</tr>
<tr>
<td>Interview with Head of IT Wallace High School</td>
<td>Wednesday 25 April</td>
<td>Barbie Clarke</td>
</tr>
<tr>
<td>Interview with Wallace High School SEN coordinator</td>
<td>Wednesday 25 April</td>
<td>Barbie Clarke</td>
</tr>
<tr>
<td>Interviews with Honywood Maths Teachers</td>
<td>Monday 25 June</td>
<td>Siv Svanaes</td>
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<tr>
<td>Interview with Honywood SEN coordinator</td>
<td>Monday 25 June</td>
<td>Siv Svanaes</td>
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<td>Languages Observation Honywood</td>
<td>Monday 25 June</td>
<td>Siv Svanaes</td>
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<tr>
<td>English Observation Honywood</td>
<td>Monday 25 June</td>
<td>Siv Svanaes</td>
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<tr>
<td>Maths Observation Honywood</td>
<td>Monday 25 June</td>
<td>Siv Svanaes</td>
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<tr>
<td>Visit to Honywood School, Essex</td>
<td>1 March</td>
<td>Barbie Clarke and Siv Svanaes</td>
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<tr>
<td>Visit to The Wallace High School, Belfast</td>
<td>Wednesday 25 April</td>
<td>Barbie Clarke and Siv Svanaes</td>
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<tr>
<td>Visit to Longfield Academy, Kent</td>
<td>Wednesday 20 June</td>
<td>Barbie Clarke and Siv Svanaes</td>
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<tr>
<td>Norwegian ICT Conference</td>
<td>Tuesday 9 May – Friday 11 May</td>
<td>Siv Svanaes</td>
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All qualitative data was analysed using software NVivo 10 and using the research objectives and questions as a framework. Analysis included peer review from the research team.

2. Quantitative Research

Research Background

**Digital Kids and Youth**

- Digital Kids and Youth is a 6-monthly syndicated research study carried out in the UK amongst parents, children and teachers by Family Kids and Youth.
- The questionnaire is designed and written by Family Kids and Youth with the agreement of syndicate partners.
- The overall objectives of the research are to find out the most up to date picture of digital engagement amongst families and children aged 3 – 16 in the UK.
- Questions are designed to produce both tracking data, and to assess changes in technology, such as the introduction of tablets and smartphones.
- Research methodology is online using a nationally representative UK panel. Data is weighted to be representative of Parents and Children in the UK by social class and region.
### Research Sample (1)

**Sample (1)**

<table>
<thead>
<tr>
<th>Sample (1)</th>
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<tbody>
<tr>
<td>• 1120 Parents / Carers of children aged 3-16 years</td>
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<tr>
<td>• 933 Children aged 7-16 (children of the parents / carers sample)</td>
</tr>
<tr>
<td>• 202 Teachers</td>
</tr>
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<table>
<thead>
<tr>
<th>Parents (1220)</th>
<th>With children aged 3-6 only</th>
<th>200</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>With children age 7-16</td>
<td>811</td>
</tr>
<tr>
<td></td>
<td>With children aged 3-6 and 7-16</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- asked questions about a younger child (3-6) and older child (7-16)</td>
<td>109</td>
</tr>
</tbody>
</table>

- 1279 responses about 1229 children
- Parent sample nationally representative (UK) by social class and region
- 25% single parents, 39% mother, 36% fathers in 2-parent households

### Research Sample (2)

**Sample (2)**

<table>
<thead>
<tr>
<th>Sample (2)</th>
</tr>
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<tbody>
<tr>
<td>• 1120 Parents / Carers of children aged 3-16 years</td>
</tr>
<tr>
<td>• 933 Children aged 7-16 (children of the parents / carers sample)</td>
</tr>
<tr>
<td>• 202 Teachers</td>
</tr>
</tbody>
</table>

| Children (933) | School years 3-5 | 309 |
|               | School years 6-8 | 319 |
|               | School years 9-11 | 305 |

<table>
<thead>
<tr>
<th>Teachers (202)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Primary School Teacher</td>
</tr>
<tr>
<td></td>
<td>Secondary School Teacher</td>
</tr>
</tbody>
</table>

All teaching full or part time since September 2011
Appendix 2: Research Objectives

The overall research objectives for the research study were to find out whether the feasibility of providing Tablets to secondary school pupils in the UK can be justified in terms of pupil benefit, teacher benefit, pupil learning, potential risks including safety and security, cost, and acceptance by pupils, teachers and parents. Three Secondary schools in the UK were identified in which one-to-one Tablets have been introduced across the school.

The research aimed to provide a full understanding of the background of the schools and the journey they went on to introduce Tablets into the school.

Research objectives explored the following:

- What are the demographics of the school?
- When were Tablets first introduced?
- What were the reasons for wanting to introduce Tablets?
- Did the schools consider other brands of Tablets and why did they decide on iPads?
- What was the nature of the decision making process and who in the school was involved?
- How did Apple support the schools in this process?
- How did the schools finance the Tablet scheme?
- What were the additional costs of infrastructure and insurance?

The research further explored the way Tablets were introduced and implemented across the schools. In particular this included asking:

- Were teachers and/or pupils provided with training, and was this conducted internally or externally?
- How did teachers feel about the training they were given?
- What was the initial response from teachers?
- What was the initial response from parents?
- What was the initial response from pupils?

A key objective of the research was to understand the effect the Tablets were having in schools. This included:

- What effect were the Tablets having on pedagogy - the way teachers teach and pupils learn?
- What is the availability and quality of content currently available for the iPad?
- How is content identified, both by teachers and by pupils, and how it is used in lessons and at home?
- What is needed in terms of filling potential gaps in digital educational content?
- What is the effect on teaching and teacher engagement?
- What is the effect on parental engagement?
- What is the effect on pupil engagement and motivation to learn?
- What are the features of the Tablet that facilitate these benefits?
- What is the role of the brand of Tablets (iPad) in this?
The research also sought to explore any challenges that have occurred as a result of the introduction of Tablets. This included questions:

- Have there been problems related to safety and security and how have the school’s dealt with this?
- Have the schools experiences problems with breakages and how have they dealt with this?
Appendix 3: One-to-one Devices and Pedagogy: a literature review

‘A general lack of formal monitoring and evaluation activities inhibits the collection and dissemination of lessons learned from pilot projects and the useful formation of necessary feedback loops for such lessons learned to become an input into educational policy. Where such activities have occurred, they focus largely on program delivery, and are often specific to the project itself’. (Trucano 2005)

ICT in Education

Despite being given much attention in the last decade there are still significant gaps in the research literature on the impact of ICT in education, and how this affects pedagogy. According to Trucano (2005) research has not yet not been able to prove the ability of technology to promote changes to pedagogy, student centred learning and so-called ‘21st century skills’. Similarly, Penuel (2006) argues that although there has been much focus given to technology in schools, there is a lack of research looking at long term outcomes of the technology, especially in one-to-one schemes. He calls for research that compares outcomes with implementation methods, in order to shed light on what best practices are.

Trucano (2005) argues that ICT initiatives too rarely view technology as integral to learning, and tend to implement technology while only later attempting to adapt pedagogy around this. The research shows that schools that clearly link their use of technology to pedagogy, and set clear goals for this use, are much more likely to see positive effects. Trucano also argues that there is currently a tension between the new forms of learning that it is hoped ICT will promote, such as creativity, problem-solving skills, communication skills, informational reasoning skills and collaborative learning, and standardized forms of testing. There is also a tension between this form of learning and the research methods used to evaluate the initiatives.

ICT and Pedagogy

There is insufficient monitoring and evaluation of ICT initiatives in general (especially over a reasonable period of time), few common sets of indicators, and few international comparisons (Trucano 2005). There are also questions about whether standardised testing is the best way to measure the effects of technology overall (One-to-One Computers in Schools 2010). A discussion of measurement methods necessitates a discussion of what the goals of introducing technology are, and thus what it is that should be measured. Much of the existing research relies on quantitative data measuring the presence and functionality of ICT, as this is easiest to collect, but Trucano (2005) argues that this has a tendency to have a positive bias.

There is currently very little research that has looked at the effect of Tablets on pedagogy, or on one-to-one internet devices (e.g. laptops and notebooks) and pedagogical outcomes. There is however older research on ICT in general and the impact on pedagogy. This research clearly says that the impact of ICT is dependent on the pedagogical approach of the school and teachers, which might have to be adapted to fully integrate technology (Tanti and Cameron 2011). Similarly, it argues
that traditional approaches to ICT will have to respond to more sophisticated views on learning that have become prominent in the last two decades (McCormick and Scrimshaw, 2001).

McCormick and Scrimshaw (2001) have argued that ICT is likely to have an impact on schools in a variety of ways. Firstly it is likely to impact constructs of how learning takes place, what knowledge is, and what the role of the teacher is. ICT is also likely to impact on the language of the classroom and the discourse of the school. Depending on how well it is integrated, McCormick and Scrimshaw argue that there are three levels of change brought about by ICT. The first and least pervasive change is described as ‘improving efficiency through ICT’, in other words improving what is already happening. The second change is one that extends the reach of teaching in terms of what both teachers and pupils can achieve. Being able to access vast amounts of information through the Internet for example is one such extension. The third change is a transformation of how the subject is conceived, what it includes, and what it seeks to communicate. Changes such as this can radically transform the discourse of the classroom and the role of the teacher, and teacher training therefore must go much further than simply introducing and explaining technology; it should, it is argued, include discussions of pedagogy and what the role of the teacher is in this new environment (McCormick and Scrimshaw, 2001).

If new technology is not implemented properly there are a variety of tensions that are likely to arise within schools. A common tension among teachers is between teaching about technology and teaching through technology (John and Sutherland, 2004). This could lead to teachers feeling that the need to teach ICT was taking away from teaching their subject area. In particular teachers described the dichotomy between the conflicting languages of ICT and their subject. This earlier literature points out that technology needs to be integrated into learning, rather than be treated as a separate curriculum.

Although it is important to bear in mind the clear gaps in the research, the research available does indicate a positive impact of technology in the classroom, when coupled with a focus on teaching and learning practices. These include increased teacher and student motivation, learner autonomy and moves towards more student-centred learning (Webb and Cox, 2004; Trucano, 2005). Webb and Cox argue that collaborative learning is a potential effect, which can lead to deeper learning, but they suggest that this is difficult to achieve. While there is very little research on this, it is apparent from the research available that using technology in collaborative learning requires strong facilitation by the teacher. It is also argued that pupils largely feel that the sense of collaboration and self-pacing that comes from using technology in learning is more enjoyable and benefits them more (Webb and Cox, 2004). These authors reported an increase in pupils’ ability to control and regulate their own learning, which prompted a strong sense of satisfaction. The literature also indicates however that a minority of pupils still prefer their learning to be teacher-led.

Wide integration of ICT is likely to lead to less whole class teaching (Webb and Cox, 2004). These interactions are however dependent on teachers being explicit about their philosophies of teaching and ICT. Many teachers do not see the benefit of ICT and will therefore not adapt their teaching methods to integrate technology. Teachers must therefore reflect upon their approach to pedagogy, as well as their knowledge about the pupils they teach and the levels of support they need. If these frameworks are in place, ICT appears to motivate teachers in their teaching.
Teachers’ use of technology is dependent it seems not only on the individual teacher’s personal style and attitude towards pedagogy, but also the ‘subcultures’ of specific subjects, and the pervasive pedagogical tendencies within these (John and Sutherland, 2004). John and Sutherland give the example of English and argue that the language of ICT will contradict the language of English as a school subject, as well as implicitly encourage children to work at their own pace, while the English curriculum has a strong collective code, moving pupils through at a particular speed. This leads to ICT being far more prominent in some subjects over others, although the authors do not provide specific examples of this. Another issue is that ICT tends to promote creativity and autonomy, which means that teachers will have to be comfortable about giving up control and granting this freedom to their pupils.

The current state of ICT in schools has thus come under harsh criticism in recent years for not sufficiently taking advantage of what technology has to offer. Whitefield (2012) notes that the challenge may be particularly acute in secondary schools where pressures such as curriculums and exam structures play a part. Whitefield concludes overall “has anything changed between 2002 and 2012? There are some strikingly similar themes” (2012: 290).

One-to-one computer trials

There are thought to be many benefits of supplying students with personal devices, so-called one-to-one schemes. With newer devices such as laptops, netbooks and now Tablets this is thought to deliver portability, interactivity, customization, constant connectivity, communication and seamless learning across home and school (Chan, Roschelle et al., 2006). One-to-one schemes are often implemented with goals of achieving active, collaborative learning, but it is argued that these must be employed via modern pedagogies to ensure full effect. There is still little research on one-to-one schemes, and Chan et.al argue that research needs to focus on areas such as how to ensure best use of technology outside of school, how to minimize risk and ensure privacy and how one-to-one technology affects the physical environment of schools. Research should also deal with any possible negative effects such as the over use of devices, or antisocial behaviour, which may be concerns that arise from future one-to-one schemes.

In a study of one-to-one implementation of laptops at a school in the US (Donovan, Hartley et al., 2007) most of the concerns expressed by teachers at the early stages of the implementation were about the impact it would have on them as individuals (on their time, their planning, the way they give instructions). Fewer were concerned about how to use the technology in their teaching. Teachers also expressed a fear of having to change their existing teaching practices. These authors therefore argue that teacher training prior to one-to-one implementation needs to be aligned with the concerns teachers have, and therefore include a focus on general management skills. In another review of a one-to-one laptop scheme in higher education (Tanti and Cameron, 2011), classroom management was found to be of concern to teachers, and it is argued that this needs to be taken into account when implementing technology on a large scale. Donovan, Hartley et al. (2007) advise schools to consult teachers during the implementation process, to ensure teachers feel their voices are heard and that they have ownership of the process. If the support system is in place, one-to-one deployment can allow teachers to change their teaching style to a more student-centred and pupil-
led environment. This can also be threatening to teachers however, which suggests a strong argument for the need for continuous teacher development.

In a study in Australia (Loch, Galligan et al., 2011) two universities which gave a group of students netbooks for their mathematics education monitored student interactions and found increases in participation, collaboration and student-centred learning, but noted that this was dependent on factors such as infrastructure and teachers’ attitudes and teaching styles.

There are many overlapping aspects between laptop schemes and the current Tablet schemes in terms of the goals of implementation and the results experienced. Several laptop schemes, for example, express the wish to focus on student centred learning as a driving factor for introducing the schemes in the first place, and report the increased pupil motivation to learn as one of the positive effects of the changes (Tanti and Cameron, 2011).

Technology providers are conducting their own evaluations of trials in schools. ACER and European Schoolnet carried out an evaluation (Vuorikari, Garoia et al., 2011) of a one-to-one netbook trial in 124 schools across six European countries. The review reported increased levels of pupil motivation and a positive impact on learning. The pupils’ use of the device was restricted to the classroom and at home, due to the somewhat limited portability of the device which made it difficult to use in other locations. The schools also reported significant problems with breakages and connectivity.

Many areas of these one-to-one schemes remain insufficiently researched, and there remains a clear lack of robust evidence showing improvement in the quality of education through the use of one to one devices in school (Tanti and Cameron, 2011).

**One-to-one Tablet trials**

The iPad 2, the device which could be argued fuelled the popularity of Tablets, was launched in Spring 2011, and many of the trials with these devices in schools started the same year. Research has thus had little time to fully assess these developments. There is therefore very little robust research in this area, despite the rapidly growing popularity of these devices in the educational sector. Hence, there is a need for more research to support schools and policymakers in the many changes that are likely to emerge in this sector in the coming years.

The few research studies that have been undertaken that have looked at the use of Tablets in schools appear to have small sample sizes. One study carried out in Norway with a High School class with 18 pupils (Valstad, 2010; Valstad, 2011) reported benefits such as increased collaboration and sharing, more varied and project based learning and increased pupil motivation to learn. This research also reported the need for innovative teaching, good teacher training and, importantly, strong leadership and school-wide support. The author argues that pupils in schools are demotivated by not being able to engage with technology at the same levels in school as outside of school, and that they feel that education is not keeping up with the rest of society. If devices such as Tablets are implemented successfully, Valstad argues that these changes can mitigate the disconnect between home and school.
ACER and European Schoolnet are currently finishing a trial similar to the netbook trial mentioned above (ACER 2010). The current trial has monitored a scheme with Tablets in eight countries. The findings of this trial will no doubt be useful, but the research has drawbacks regarding its scope and distribution of devices. Out of 400 tablets, nearly 250 devices have been distributed to teachers. The remaining 150 devices were distributed amongst 5 classes (in different schools) and monitored over 6 months. It could be argued that this trial does not therefore provide evidence of a larger scale implementation in individual schools which is one of the objectives of the Tablet for Schools research. There is little research evidence that compares the use of different manufacturers, which may be a factor in the way in which Tablets are perceived by pupils and teachers. There is therefore a need for objective and robust research of larger scale one-to-one Tablet implementation over a period of time, preferably comparing different brands of Tablet technologies.

There is however more research on Tablet PCs, the predecessor to the Tablets currently on the market. There are important differences between these devices which should be considered when reviewing this research. The processing power of these earlier Tablets was much more limited, battery life was shorter and they did not yet have the operating systems (Android or iOS) current Tablets have, which give these the same uses as a smartphone but with more power and functionality. Although the research is positive towards the use of these in schools, the research notes significant amounts of frustration with Tablet PCs freezing or being very slow and requiring maintenance. These issues are significantly improved with the newer Tablet devices. These also have more applications compared to the earlier models, such as audio and video recording, and a wider range of content available, which is evident in the rapid increase in educational apps developed for iOS and Android in the last year.

Research on Tablet PCs in schools has shown that these technologies need to be used creatively and that teaching method is essential to their positive impact on teachers and pupils, findings which correlate with earlier research on the use of laptops and desk top computers in schools (McNeal and Davidson, 2008). Increase in pupil motivation to learn, as well as communication between teachers and pupils have proven to be common benefits (Sheehy, Kukulksa-Hulme et al., 2005). Teachers were also positive about their use, but there were differences in the way in which teachers used the devices. While some teachers were using the devices very creatively, others were using them less and in more traditional ways (McNeal and Davidson, 2008); a similar argument has been made about the way in which teachers use interactive whiteboards (Tanner, Jones et al.; Glover and Miller, 2001; Armstrong, Barnes et al. 2005; Smith, Hardman et al. 2006). Teacher collaboration was also proved to be very important to maintain confidence and familiarity in the uses of the technology.

**Teacher Training**

The available research on the implementation of ICT in schools suggests that teacher training is essential to ensure large scale positive effects of wide spread use of technology (Trucano, 2005; Penuel, 2006; One-to-One Computers in Schools, 2010). The success of implementing new forms of technology into schools is dependent on teachers being both familiar and confident with the technology (John and Sutherland, 2004; Webb and Cox, 2004).
ICT alone will not change teaching practices, but it can enable teachers to occupy more of a facilitating role. Training is not mostly about the specific use of a device, but about being reflective about pedagogy and use of the device, as well as leadership and planning skills. Research suggests that ‘one-off’ training is not sufficient and that teachers require continuous exposure to technology use. Another recommendation is including teachers both in the discussions around implementation and the preparation of teacher training, to ensure ownership of the process (Penuel, 2006). Clear case studies of successful training programmes are however few.

According to Penuel (2006) teacher training prior to one-to-one implementation of devices must discuss aspects around pedagogy, as most teachers will adapt traditional methods to include technology, but not radically alter their approach to pedagogy. Penuel argues that training must include building trust in pupils, in the device, and in the content available to them. Penuel also suggests a combination of external formal training and more informal, continuous internal training.

Support from the whole school and the community is clearly important (Trucano, 2005). School leadership has also proved to be very important, in order to maintain the support from teachers, develop goals, direction and a shared vision (One-to-One Computers in Schools, 2010). More research is however needed into how schools and parents engage with children’s use of technology in their learning.

Conclusion

There is currently insufficient research evaluating the impact of one-to-one mobile learning devices, despite the growing popularity of such devices in the educational sector. Research on the use of ICT in schools has long suffered from a lack of evidence on the impact and outcomes of the use of technology (Trucano, 2005). There are therefore few guidelines and examples of best practice to ensure positive effects for other schools and organisations.

The effects of ICT on pedagogy have been debated in the research literature for some time, but there is little evidence of how portable devices, and touch screen technology in particular, changes or improves this, although it appears that it is this aspect that often triggers the motivation for schools to invest in Tablets. There are few rigorous research studies that look at one-to-one implementation, and because Tablet devices are so new, there is very limited robust research on one-to-one schemes with Tablets. The case studies and reviews available do not offer rigorous research evidence of the benefits of Tablets, and do not link the perceived benefits to implementation measures. Available research studies are therefore unable to provide guidelines for successful integration of tablets into education.

There is specifically a need for longer term research that looks in depth at more comprehensive one-to-one tablet schemes, and not just individual classes. There is also a need for objective, independent research comparing the different brands of Tablet devices. This is especially needed considering the rapid growth of the Tablet market, and Apple’s current position in the educational sector. Research should compare implementation measures and outcomes to recommend best practice to policy makers, educational Tablet manufacturers, and to schools that might be considering investing in one to one Tablets.
References


Appendix 4: Tablets for Schools

Tablets for Schools is a corporate social responsibility programme led by Andrew Harrison, CEO of the Carphone Warehouse.

The Mission

To enable all school children to have access to Tablet technology to transform the way they learn.

To inspire schools and provide a blueprint for them to adopt Tablet technology; to help them change the way they teach and improve children’s attainment.

An Evidence Based Evaluation Paper – Key Facts

Having spoken to manufacturers, content providers, educationalists and academics over the last six months Tablets for Schools is aware that there is interest amongst stakeholders about the high profile that Tablets for Schools is likely to have in the UK, and in particular it has been indicated that a robust research evaluation is much needed:

a) Little robust research currently exists that considers one-to-one Tablet use.

b) Manufacturers and content providers confirm this, and have indicated that they are willing to learn and to share learning.

c) This is borne out by our literature review of available UK and global research, prepared for this proposal and for our application for Economic Social Research Council (ESRC) funding, which shows a serious gap in the literature.

d) An evaluation paper is particularly attractive in this instance (indicated by Apple, Google and Microsoft amongst others) because it will be seen by key decision makers in government.

e) The Department for Education has indicated that an evidence based paper is necessary before any policy decisions can be made.

f) An evidence based evaluation report will facilitate the long talked-about notion of a one-to-one device for all children in secondary school in the UK to finally take place, led by The Carphone Warehouse’s CSR initiative.
Appendix 5: Family Kids and Youth

The Research Team

Family Kids and Youth is one of the UK’s leading agencies specialising entirely in research with families, children and young people, and teachers and carers, providing both research and consultancy. The team are members of the MRS, AQR and ESOMAR. Family Kids and Youth is working regularly in partnership with and as consultant to several companies and organisations, including The Advertising Association, the BACP, the BBC, Clarks, IKEA, Sport England, The London Olympics 2012, Unilever, The University of Cambridge and The British Heart Foundation. Family Kids and Youth is on the Government Procurement roster, and is a Company Partner of the Market Research Society. For further details visit our website www.kidsandyouth.com.

Dr Barbie Clarke

Managing Director, Family Kids and Youth

Barbie has been a researcher for over 30 years and was formerly Director of Family Research at GfK NOP. Her PhD at The University of Cambridge was in child and adolescent psychosocial development and her research at Cambridge has centred on Early Adolescents and the way they communicate using digital media. She teaches child development and research methodology at the Faculty of Education, Cambridge, and is co-author of the book ‘The Supportive School: Wellbeing and The Young Adolescent’. She is a Fellow of the Market Research Society, sits on the BBC’s Children’s Editorial Board, and is spokesperson on children’s research for the MRS. Barbie was lead researcher on the project.

Siv Svanaes, MSc. Research Project Manager

Siv joined Family Kids and Youth in 2011 as research assistant from the London School of Economics (LSE) where she gained a Distinction for her MSc which she studied under the guidance of Professor Sonia Livingstone, author of the EU Kids on Line Report (2011). Siv has a BA from the University of Oslo in musicology and media studies. Her MSc at the LSE focused on the use of digital media, broadcasting and audience research with children and young people. Siv has been working on the Tablets for Schools project since October 2011 and carried out ethnography and interviews with pupils and teachers in the Tablet schools.
**Martyn Richards, Qualitative Researcher**

Martyn has specialised in quantitative and qualitative research for over 25 years with a focus on child and youth research. Martyn was a Director at ChildWise for 9 years and began his career at Taylor Nelson. Martyn is a Fellow of the Market Research Society and is currently Chair of the Awards Board for the MRS Accredited Masters Award. Martyn worked extensively on the Tablets research 2011-12, carrying out focus groups with teachers, parents and pupils at Honywood and Alec Hunter schools.

**Karen Wigley, Qualitative and Quantitative Researcher**

Karen is an experienced child and family quantitative and qualitative researcher and first worked at Director level in Dr Barbie Clarke’s team at GfK NOP Family. She has spent 20 years in market research, working before GfK NOP at Market Trends (TNS) and Cambridge Market Research to Associate Director level. Karen has worked extensively on the Digital Kids and Youth research, and oversaw the quantitative research with teachers, children and parents.

**Debby Konigsberg, Qualitative Researcher**

Debby has been a researcher for over twenty years and has worked in both the commercial and social research sector and has carried out several studies for government. Her experience spans work with children, young people and their parents and carers. Debby trained originally as a Primary School teacher and to keep her practice up still works as a supply teacher in schools. Debby carried out focus groups with teachers, parents and pupils in the schools with a particular focus on the Primary School pupils.
Alex Tan, PhD Candidate, Research Associate

Alex joined Family Kids and Youth in July 2012 having completed his thesis for his PhD at the University of Newcastle. Alex was successfully awarded a prestigious ESRC 1+3 award in 2007 to undertake his PhD research on British Chinese youth transitions. He has a Masters in social research methods which involved training in a variety of quantitative and qualitative methods. Since joining Family Kids and Youth Alex has worked extensively on the analysis of the Tablet research as well as our Digital Kids and Youth research.

Julia Macpherson, Research Assistant

Julia has worked as administrator/researcher at Family Kids and Youth for nine years, and has contributed to many studies involving large panels, schools, and hard to reach young people. She has been involved in many workshops using the Panel plus other groups of children and young people for The London Olympics 2012, Trouble TV, The BBC and Dept of Health. Julia has been responsible for assisting the team, and setting up research focus groups with parents, teachers and pupils in the schools.