

# NP<sup>3</sup> Exploratory Study 7

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## What is NP<sup>3</sup>

New Purposes – New Practices – New Pedagogy (NP<sup>3</sup>) is a collaboration between The Open University, Lancaster University and Manchester Metropolitan University, led by Professor Peter Twining.

NP<sup>3</sup> is finding out about how children's digital practices influence teaching and learning. **NP<sup>3</sup> aims to find out about how children use digital devices outside school and what influence (if any) these practices have on what pupils and teachers do inside primary schools.** The focus is on pedagogy across the curriculum (rather than the teaching of computing).

### Our Research Questions (RQs) for these exploratory studies are:

- RQ1 What are the digital practices that pupils bring to their learning in school?
- RQ2 Across subject domains what do teachers' intended and enacted pedagogic practices indicate about their awareness of and the value accorded to pupils' digital competencies, and how do pupils' experience these pedagogic practices?
- RQ3 What institutional circumstances and practices enable or undermine how pupils' digital competencies and practices are recognised (RQ1) and integrated into teachers' practice (RQ2)?

This brief report provides a **snapshot** of the digital practices evident in one of the 10 Exploratory Studies that we conducted between October 2015 and March 2016, with a summary of emerging findings from this Exploratory Study.

For further details about NP<sup>3</sup> go to <http://www.np3.org.uk>.

## Exploratory Study Overview

Exploratory Study 7 (ES7) is a community primary school located in a mainly prosperous part of South West London. The Exploratory Study focussed on a Year 4 and a Year 5 class, as well as the out of school digital practices of individual pupils in Years 2 and 6.

## Emerging findings

- Children had extensive access to ICT at home, the key limitations being parents' perceptions of the value and potential dangers of ICT use and children's engagement with offline activities.
- Children engaged in a wide range of activities involving ICT outside school which converged with their interests and passions as well as their desire to play games.
- In terms of the school's mission statement, the role of ICT was to ensure children were skilled for an unknown future 21<sup>st</sup> Century labour market.
- The role of ICT in teachers' pedagogical approaches was to facilitate children's engagement with learning as active learners and to develop their ability to work collaboratively in order to produce a common product.
- Teachers' incorporated some of children's digital technology skills developed at home into their pedagogical practices, such as making films and animations. However, there seems to be further potential for building on other aspects of children's home digital practices. Using Google Apps seemed to be adding new practices to children's repertoires.

## Pupils' digital practices outside school

Six Year 5 pupils (5 girls and 1 boy) took part in one of two focus group interviews. Six Year 4 pupils (two girls and four boys) took part in the other focus group interview. Three other children (a boy and a girl in Year 2 and a boy in Year 6), and their mums, kept photographic records of the child's ICT use over a two-day period. These 'Log' children and their mums were then interviewed individually.

The three Log pupils had access to a wide variety of digital technology at home. They all had a Smart TV and a tablet. At least two had access to a laptop (one with a joystick), a mobile phone, a Play Station console (one child had two in the family). One child had access to a Wii. Two of the Year 5 children in one of the pupil focus groups used Scratch at home, suggesting that they had at least a laptop or a desktop PC. One of these pupils (a boy) also made films on a mobile phone.

Children's use of ICT at home was limited by parents so that children spent a relatively small proportion of their free time using ICT. Children's ICT use was constrained by the number of offline activities they engaged with such as sports and tutoring (in non-formal spaces, although one child did tutoring online at a tutoring centre) and off-line play (e.g. with Lego) or reading (paper books) at home. One mum said she would rather that her son played with Lego offline and read books while he was still interested in these activities. However, she felt unsure how much and what kind of ICT use she should be encouraging her children to engage with and would like some guidance from the school on this. Some children and parents also claimed that children's ICT time was limited outside of school because it wasn't seen as a beneficial activity for their education or wellbeing and was perceived as anti-social. Parents also expressed fear of children's potential 'addiction' to ICT.

Playing games was the most widely cited activity type among children – all three Log children played at least one of a variety of games, including Minecraft, Ninjago, Temple Run 2 and Lego Movie Game. As a 'sandbox game', Minecraft frees a child from traditional gaming goals and enables children to choose how they inhabit and interact with an open world; typically children design, build and maintain their 'space' within their world. The Log children played games on their own or with siblings or friends,

### Log pupil about to play The Lego Movie Game



but never online, and switched between competitive and collaborative play, particularly in Minecraft. Children reported playing games for entertainment but one boy also said a motivation was to experience the capabilities he would have if he could obtain a particular character (Usain Bolt) on Temple Run 2. This game, and other action/adventure games combine engagement with fast action and puzzle elements embedded in an overall mission and storyline.

Children also engaged in 'digital making' activities, although there was far less of this kind of activity at home compared with in school (see the In School section below). When children made things at home, this included coding to create games, taking photos, making films and creating a slideshow for homework. These were mainly older children (Years 5 and 6) rather than younger (Year 2) but included both boys and girls; two girls and a boy practiced coding to

make games. One child (Year 5) seemed to have significant skill at coding, having been taught by her dad. This was valued by other children in her class during coding lessons where she could help classmates who found coding more difficult. Two children had experience of sharing their games online with others, which they described as 'an amazing experience'. None of the other children reported sharing what they made online or communicated with others online.

Children also searched for specific information or other online content (e.g. pictures, videos) using digital devices. Again this type of activity was most common among older children. For example, a Year 6 child had a passion for aerospace and wanted to become a pilot. This child researched plane types acquired by different airlines online, used flight tracking websites to track flight routes, used flight simulation software on their laptop and researched transport for a family holiday from their home to their overseas destination.

### **Log pupil researching transport routes at home**



Younger children of both genders also engaged with watching films on iPlayer or a Smart TV. One child also searched online for information about film ratings because they had asked their mum if a particular film was appropriate for them to watch. The mum had suggested they searched for information about the rating so the child could make their own decision about whether it was appropriate.

# In School

## Context

This was a community primary school in London, with around 324 pupils aged between 3 and 11 (i.e. Foundation to Year 6). Around 15% of the pupils in ES7 were eligible for free school meals and roughly 6% had an identified special educational need. The school was rated 'Outstanding' by Ofsted in their last inspection in 2010. Attainment in all assessed subjects was well above national benchmark levels.

## Vision and digital spaces

The School's mission statement was about fostering a creative and challenging education for a very diverse population of students and to create a 'nurturing, stimulating and safe' environment for every child (Head Teacher interview). There was significant emphasis on enabling children to exercise agency as learners rather than positioning them as passive. There had also been a recent drive to ensure all children were enabled to participate equally in learning. This had been driven forward through cycles of observation and monitoring. The Head Teacher described the school as 'not academically driven' but as having a focus on enabling children to develop skills, knowledge and understanding through exploration and dialogue. The Deputy Head Teacher, who was also a Year 5 class teacher, was particularly keen to use dialogic teaching, which was evidenced in one of the lesson observations. The Head Teacher explained that teachers were encouraged to develop their own pedagogical styles but that teachers' own pedagogical expertise was also shared with other staff. Teachers were therefore imbued with a higher degree of autonomy and took part in shaping school policies and had for example written the staff handbook. The role of ICT in the school's mission and pedagogic approach was to prepare children for an uncertain 21<sup>st</sup> Century job market in recognition that to not do so would disadvantage children in the future.

Each classroom had an interactive whiteboard (IWB) and associated teacher computer and a small number extra computers. The school had a bank of 20 laptops and 16 MacBooks for use across the school and a small number of additional portable computers. These were kept on trolleys in particular parts of the school corridors and were bookable across the school. There was no evidence that the school had any tablet banks although children in one of the focus groups noted that a child used one on a regular basis when taken out of class for extra support. The school employed a specialist teacher to teach coding lessons, which class teachers were required to stay and observe in order to upskill them. At least three of the class teachers were proactive about integrating ICT in other parts of the curriculum (including the two observed) and children reported having used Google Apps at school since Year 3. The school were planning to start using Google Education in the near future.

Laptops were used in both of the observed lessons, which were respectively computing/topic and topic lessons (see pages 3-4 for further details). Children in Year 5 also had weekly coding lessons which were merged with the numeracy curriculum and therefore mathematics focussed. Children and teachers (in various year groups) also reported that they had used Explain Everything to make films about mathematical concepts; Puppet Pals to make animations to retell a chapter from a book they were currently reading; an application to compose and play a piece of music in a music lesson; a comic using the application Comic Strip. One Year 4 child also used an iPad when she was taken out of her class for extra literacy support and an electronic dictionary during lessons.

While there was no evidence of an explicit link between the school's mission and use of ICT in terms of supporting children as active learners, the way in which ICT was used in the observed lessons did suggest such a link. Here, children were positioned as active learners working collaboratively with a partner to independently create slideshows on a given topic. Children could decide on the content of slides and in one lesson the exact focus of the slideshow, research the content online and design the visual style of the slides. A child in one of the focus groups said that using ICT helped children to be more independent as learners because they were in charge of planning and undertaking their work, which allowed them to explore different ways of carrying out the task. This was in contrast to simply responding to teacher directions

in literacy and numeracy where she perceived that ICT was not used as much. Children were also conferred agency in their 'creative homework' in KS2, where children could choose which media they wanted to use to carry it out. Children were given a topic and 2 weeks to complete their assignments independently. In the observed Year 5 classroom, children's homework assignments were on display in the topic corner on The Trojan Horse. Some children had chosen to create a digital Trojan horse using Minecraft whereas others had used physical materials or had drawn on paper.

### Children's Trojan horse online and offline homework display



#### Example 1

This lesson, starting at 9.30am, was a 'computing/digital literacy' lesson although there were strong elements of literacy and history involved. The topic was Elgin's marbles, which formed part of the current Ancient Greeks cyclical theme. The lesson took place in the classroom with desks arranged in two horseshoe shapes, a larger one enclosing a smaller. Children worked in pairs, each pair sharing a MacBook. The teacher emphasised that this was to facilitate children working collaboratively. Children were seated with friends and those 'who they work well with' rather than 'ability' groups, which the school did not use. The IWB displayed the Learning Objective:

'I can make a slide show in Google Docs'.

Success criteria: 'I know I will have met LO if I have:

- Logged into Google Apps and created a slideshow
- Shared slide with partner
- Created a slide show that gives clear information on the five points you research'

The teacher asked children if they have made a slideshow before, which all children responded positively to. The teacher led a Q & A session on facts about Elgin's Marbles. He instructed children they needed to construct a slideshow that contained five questions and answers about Elgin's Marbles. The teacher led another short Q & A using open questions and explored children's perspectives and strategies for sharing a laptop and collaborating effectively. Children logged on to their computers and Google accounts and some children helped other pairs do this. Children chatted freely as they did this. The teacher then started a Q & A session about copyright and using material from the Internet, again bringing out different children's existing knowledge. Children continued working in their pairs. They used facts they had previously researched and written up in their writing books, searched for new information and pictures on the internet using Google Search, constructed their sentences on slides and designed and edited their slides. The teacher had further Q & A sessions with pairs of children

about the content of their slides and sometimes helped children who were having problems with their computers. Otherwise, there was little reference to the computing aspect. Children debated and sometimes argued in pairs about the content and construction of sentences (wording, spelling etc.) and look of slides (colours, pictures, font type and size). Pairs also struggled over who would operate the computer while the other watched and contributed verbally. Despite this, children made progress with their slides, although the teacher reminded some to debate less and move on with producing the slides. At the end of the lesson, there was a brief Q & A about sharing the slideshow online by pressing the 'share' button.

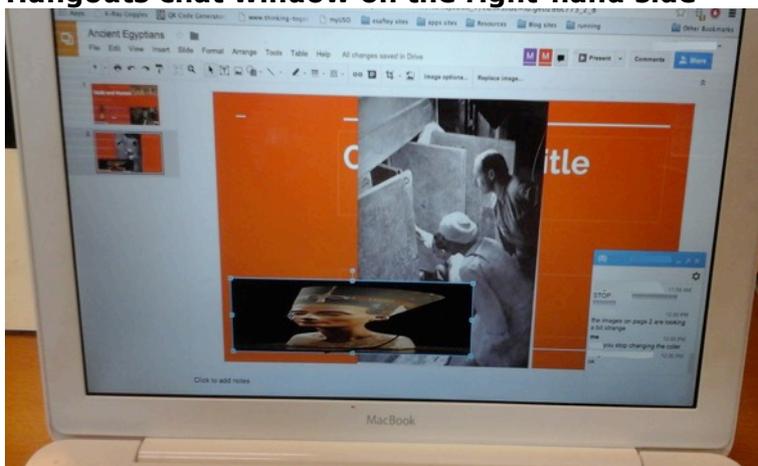
## Example 2

The teacher characterised this Year 4 lesson as based on the current cyclical topic: Ancient Egyptians, and as incorporating cross-curricular elements of literacy, computing and topic/research. The teacher commented that children were already proficient in using Google Apps and had their own accounts. They had previously looked at the visual aspects of composing slideshows and the focus today was on the information aspects. The lesson took place in the classroom with desks arranged into a horseshow shape. Children were placed into pairs by the teacher, sharing a MacBook – again, to promote collaborative work. Each pair was then paired with another pair sitting elsewhere in the classroom, who they were going to collaborate with using Google Hangouts. In one case a child was grouped with two pairs who all sat elsewhere in the classroom. The lesson began with children logging in, which was delayed as some children's MacBooks had a new operating system. Once children had logged in they were instructed to turn their laptops around to face the teacher and to sit quietly. This was to prevent children from continuing to use their computers, so that they could concentrate on what the teacher was saying. This may have had the effect of reducing children's capacity to move on with their work independently. This practice was used at various points during the lesson.

The teacher instructed children on the activity: to create a slide show using Google Slides on Ancient Egyptians. Children were able to choose their own sub-topics and slide content. Using a slideshow on the big monitor, the teacher lead a Q&A session, using more closed questions (asking for specific information) about information texts as a form of writing. They discussed the function of text boxes, bullets points, paragraphs and contents pages. He then shared a PowerPoint, as an information text through Google slides, that he had created himself on the topic of hedgehogs. Children brought this up on their own screens and were given the task of identifying the aspects of information texts that were present and which were missing in their pairs. When children had finished this task they moved on with creating their own slideshows.

The teacher showed children on the class monitor how they could share their slideshow with the other pair in their groups. Once children had moved on from doing this, the teacher introduced Google Hangouts so that children could use it to chat with their partner pair across the room to create one slideshow. Children chatted loudly and freely as they went about their work, although the teacher reminded them not to talk across the room and to use Google Hangouts instead. The teacher joined in using Google Hangouts and the stream of chat that arose

### One pairs' MacBook with slideshow and Google Hangouts chat window on the right-hand side



was displayed on the large classroom monitor. At one point the teacher announced to the class that the chat stream was displayed on the monitor to remind them that such chat is not private and that everyone in the classroom could see it on their own Google accounts. For the remainder of the lesson, the teacher's focus was on ensuring children moved on with developing the information on their slides and that they worked effectively as a team to do this. He encouraged children to split the work between the team and decide who would do what.