NP³ Exploratory Study 4

What is NP³

New Purposes – New Practices – New Pedagogy (NP³) is a collaboration between The Open University, Lancaster University and Manchester Metropolitan University, led by Professor Peter Twining.

NP³ is finding out about how children's digital practices influence teaching and learning. NP³ 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 and integrated into teachers' practice?

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 NP³ go to **http://www.np3.org.uk**.

Exploratory Study Overview

Exploratory Study 4 (ES4) is an academy infant school located in a mainly lower socio-economic part of London. The Exploratory Study focussed on a Year 1 and a Year 2 class, as well as the out of school digital practices of individual pupils in Reception and Years 1 and 2.

Emerging findings

- Children had extensive access to ICT at home, the key limitations being some parents' perceptions of the value and potential dangers of ICT use and their preference for children to engage with non-ICT activities.
- Children participated in a range of activities involving ICT outside school, which converged with their interests, passions and ambitions and were intertwined with non-ICT activities. Some of these, which were encouraged by parents, were directly aimed at improving developmental skills and educational attainment.
- The role of ICT was seen as being integral to meeting the school's mission statement, which was to ensure children were skilled for an unpredictable, future 21st Century labour market and became independent learners. It was also seen as central to their aim of ensuring high academic attainment for every child.
- The intended role of ICT in the school's signature pedagogy was to facilitate children's engagement with learning as active learners and to develop their ability to work collaboratively. The extent to which this was evident varied across the subjects being taught in the two observed lessons.
- Teachers reported that ICT was used in most lessons across the curriculum, though not by all children in each lesson. Activities included making presentations on PCs and iPads, making films on iMovie/iPads, and playing games designed to meet National Curriculum aims.

Pupils' digital practices outside school

Five Year 1 pupils (4 girls and 1 boy) took part in a focus group interview. Five Year 2 pupils (2 girls and 3 boys) took part in a second focus group interview. Four other children (2 boys in Year 2, a girl in Year 1 and a girl in Reception), and their mums, kept photographic records of the child's ICT use outside school over a two-day period. These 'Log' children and their mums were each interviewed individually.

The four Log pupils had access to a wide variety of digital technology at home. All four had access to a tablet (three of which were iPads). At least three had access to a Smart TV and two had access to a games console (one of these was an Xbox but with no accompanying games). One had access to a desktop PC, another to a laptop, and a third had access to a smart phone.

The Log children's parents limited the amount of time children could use ICT at home. Some of them also managed much of their children's use of ICT, by for example, directing them to play 'educational games' or engage in overtly educational activities (e.g. using the BBC Bitesize website). These uses of ICT were directly aimed at improving children's attainment in school. For example, one girl (Girl A), who used a Leapfrog tablet to play phonics, comprehension and maths games, and an art application, said she had also played maths games on her iPad to improve her skills.

Despite these parental constraints, one Year 2 Log pupil's (Boy A's) parents played digital games with him regularly and incorporated it into 'family time'. His parents were actively involved in their child's ICT use. This child had rich possibilities to take up in the home, as he was allowed to choose from a range of games, music, apps and videos which he could engage with freely (and on his own if desired) during his daily 1 hour of ICT.

He watched music videos and then, inspired by this he danced and sang along. He also attended singing lessons after school, which formed part of his ambition to become a rock star. The youngest Log pupil interviewed (Girl B), a 4 year-old girl, used her iPad to take photos and videos on a topic of her choice (for example, about her pet hamster eating a nut) which she shared with family members.

Boy A dancing to music/video on iPad

Children also played a range of games which were not aimed directly at raising educational attainment, including Minecraft (Boy B and Girl B), ColourSwitch (Boy A), MarioKart (Boy A), 'racing games' on a PS3 (Boy B), games on www.frive4school.com (Girl A, a website with free games for children), the CBeebies Mister Maker App and a Disney Frozen App (Girl B). Of the two children who played Minecraft, one had designed and built a virtual rocket (Boy B, Year 2) and another designed and constructed virtual houses, including designing interiors (Girl B, in company of her 9 year-old sister). A Year 2 boy in Focus Group B had made a film which he had placed on his own website, which the Headteacher had reportedly tweeted about. While the topic of the film was unclear, he said he had collected pictures which he edited and made into a film. Most of the children in this focus group had an iPad at home and some played games such as Angry Birds, Star Wars, Transformers and Ninjago. Two children in Focus Group B and one child in Focus Group A (Year 1) watched films on YouTube or on a Sky Smart TV in their first languages.

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In School

Context

This was an academy infant school in London, with nearly 440 pupils aged between 3 and 7 years (i.e. Pre-school to Year 2). Around 44% of the pupils were eligible for free school meals sometime during the previous 6 years. Roughly 0.5% had an identified special educational need and nearly 70% were classified as having English as an additional language. The school has been twice rated 'Outstanding' by Ofsted, in 2009 and 2014. Attainment in all assessed subjects was well above national benchmark levels.

Vision and digital spaces

The school aimed for all children to attain highly, which staff identified as translating into their high expectations of each child. The school worked closely with parents, offering a full time parent support advisor and a dedicated space within the school for support work to take place. A series of workshops aimed at equipping parents to support their children's learning was also provided by the school.

The head identified the school as having a signature pedagogical style, of which a key feature was to empower children as learners, based on principles of 'talk4learning' (School Prospectus). The school's aim of developing the pupil's skills as independent learners provided the rationale underpinning their iPad buying scheme: to equip children with the resource and skill set to continue learning outside of school (see below for further detail). Both observed teachers described their practice as being highly influenced by the school's signature pedagogy and as being tailored to the needs of specific children. This was seen as particularly important given the diverse pupil cohort in terms of 'ability', 'special needs' and different aspects of children's ethnicity and religion.

The school positioned itself as a trailblazer in terms of its use of digital technology across the curriculum. Each classroom was equipped with 4-5 PCs that were built into 'computer tables'; the computer could be folded out of sight when not in use. They also had access to iPads, with a ratio of 3:1. The computer tables were used on rotation by a different group each lesson so that all children used them at least once a day, using other technologies at other times, where appropriate. The iPads were only observed to be used by one pair in the Year 1 Literacy class and another pair in the Year 2 Geography lesson. Around 10 children used the computer table PCs (each PC was shared by a pair) in each observed lesson, whilst the rest of the children were not using ICT. The five teachers, who completed questionnaires, reported that they were confident or very confident in using ICT and used this in at least half of lesson time. A Year 2 teacher reported that they had made films using iPads: pupils took photos of 3D shapes across the school and inserted these into a film on iMovies, along with written and spoken text. Another teacher reported that in Year 1 they had taken pictures on their iPads and presenting these to the class.

The school used a range of ICT games from Discovery Education Espresso (a subscription digital resource service) and the www.ictgames.com website, all of which were designed to meet National Curriculum objectives. These games were played regularly by children across the school curriculum (in core and non-core lessons). Teachers tended to specify which games children could play during a specific lesson. In the nursery class, children had more choice as to when they played specific games during 'free-flow'. For example, a small group of children were observed playing a digital shape sorting game from Espresso on a large touch screen. The children dragged different shapes from one area of the screen to the correct area for that type of shape. This was reported to be a common activity in the class, where they used a range of maths games.

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Example 1

This was a literacy lesson in Year 1, taught by a teacher and two teaching assistants. The classroom had three groups of tables, one of which was a computer table with inbuilt desktop PCs, which the teacher set up prior to the lesson. There was a PowerPoint presentation on the teacher's laptop which was projected onto a large screen at the front of the classroom. All children were seated on the carpet. The teacher, standing by the screen, pointed to the written phonic sounds and children voiced them in chorus. The teacher then picked children to take his role and to ask other individual children to sound out the written phonemes. The classroom was otherwise silent during this activity. The teacher then introduced the sound of the day 'CH' and asked a child to suggest a word with this sound. He then asked children to make a sentence with that word ('chimp') and subsequently to make up more words with the 'CH' sound and to write further sentences on their individual whiteboards.

The teacher then loaded a digital game called 'Loo [*sic*], Cover, Write, Check' (from www.ictgames.com) onto his laptop and projected the image on the whiteboard. The game showed a word written under a toilet seat cover which was then closed and the player then had to drag the correct letters to a row of lines to spell the word. The teacher controlled the actions in the game but was led by children he selected to call out letters for him to spell the words. Children were otherwise silent throughout this activity apart from cheering when they succeeded in spelling a word correctly.

Children were then told to go back to their seats. A group of 8 children worked in pairs on four PCs on the computer table as it was their turn. Most of the children worked on the other two tables with their writing books and worksheets. Two girls were allowed to stay on the floor to play the spelling game above, using a graphics tablet connected to the teacher's laptop. The girls were quiet apart from briefly giggling. A boy and partner silently shared a PC between them at the computer table. They took it in turns to write the word 'we', repeatedly on one line. One of the teaching assistants worked with another pair at the computer table. At one of the other tables, the teacher led reading (from a book) with children.

Outside the classroom a pair of 'higher attaining' girls (who were not present during the whole class input) were making a PowerPoint presentation (on a laptop) about seagulls – a topic they chose. Two other pairs (from other classes) were doing similar work on the same table. The pair of girls had borrowed books from the library and had iPads to carry out more research on seagulls. They composed sentences which one girl typed on the slides. The second teaching assistant spoke with the other girl to ensure that she understood the sentences her partner had written. The teaching assistant then helped the first girl to find the right place to save the presentation on the laptop.

Printout of second slide of a PowerPoint about '10 things I didn't know about seagulls' slideshow made by two 'higher attaining' Year 1 girls
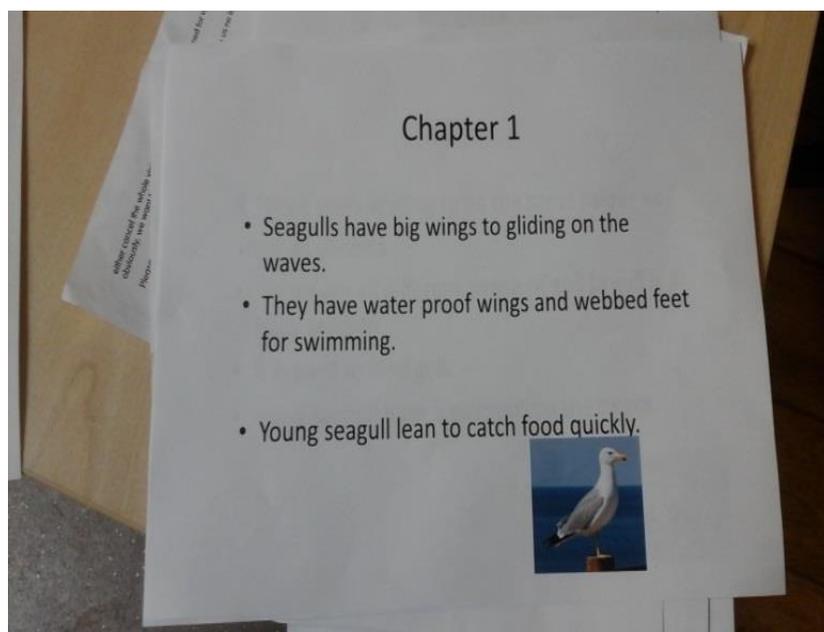
Example 2

This was a Year 2 Geography lesson taught by a teacher and a teaching assistant. Children were initially seated on the carpet. The Learning Outcome (LO) on the whiteboard was: 'I can compare the natural landscape in Struay with our school and say what is the same and what is different'. The teacher led a dialogue with children about the LO, moving through the PowerPoint slides while he was seated on a chair. He then asked children to chat with their partner about 'what is the coast?' and subsequently asked individual children to report back to the class. The teacher gave instructions for the activity which were to work in pairs and write a sentence on a shared slideshow (five pairs of children would do this on the computer table today) about each of the topics covered in the teachers' slideshow. Before moving on to the activity he asked a boy to open an existing slideshow on the teachers' laptop. It took the boy a while to navigate through all the files on the teacher's laptop but with some help from other children he managed to find the right file. This process was projected from the laptop to the screen at the front of the class. The teacher and the boy co-wrote a first sentence which the boy typed on the laptop. The teacher then picked a girl to co-write a second sentence and another boy to write a sentence with a connective in it on his own. He wrote with some scaffolding: 'I think that Struay has a coast, which is beautiful'. Other children were then invited to compose and type sentences on their own on the teacher's laptop.

After about 30 minutes, the children were told to go to their tables – about half of the class at two large tables to do group work and the other half shared a desktop computer between two, with one pair sharing a laptop. Two boys sat on the floor with an iPad each, using Keynote to make their presentation. Two girls at a desktop co-wrote a sentence, edited their writing and changed font size. Children at one of the large tables wrote on a worksheet about woodland animals. The two boys with iPads on the floor worked in parallel but spoke continuously. They were looking for photos, for their presentation, of the school and surrounding area on the school website. One of them enlarged and zoomed in on photos as he was looking for a photo of a particular child. One of the boys also used voice search on google and spoke the word 'island' as his search term. The first search resulted in pictures of Ireland as the iPad misunderstood his search term. He tried several times again, each time varying his pronunciation of 'island', until the iPad got it right and displayed pictures of islands.

A slide from two children's slideshow on a desktop PC comparing Struay and local geography
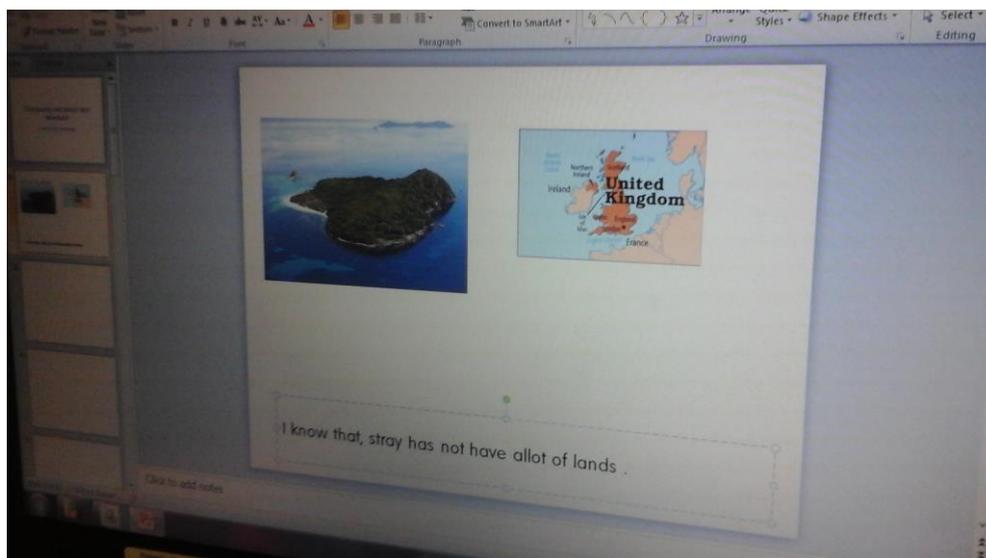
The teacher took a photo, with an iPad, of a girl's handwritten work and placed it under the visualisor to show the class, praising her beautiful writing. He then asked a boy to come to the front of the classroom and find his presentation on the teacher's computer. The boy clicked on the start button and navigated very competently through the menu, found his slideshow and presented it to the rest of the class, talking to the slides. The lesson ended shortly after.

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