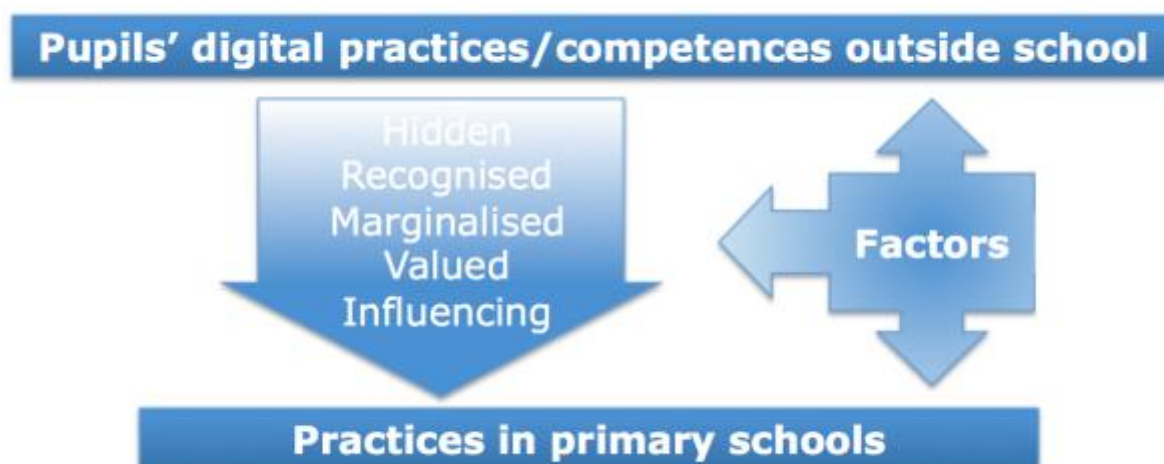


NP³ Case Study 5

Kucirkova with Twining, Hempel-Jorgensen, Henry, Murphy, Harrison, Gillen, Passey, De Geest, & Fletcher-Campbell (2017) NP3 Case Study 5 Milton Keynes: The Open University.

What is NP³

New Purposes – New Practices – New Pedagogy (NP³) is exploring the digital practices that children are engaging with outside school and the extent to which these are recognised, valued and influencing practices inside primary schools. We are concerned with issues to do with social justice and the institutional factors that impact on schools' responses to pupils' digital practices.



Our Research Questions (RQs) 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)?
- RQ4 What are the consequences of the answers to RQs 1-3 for learning in terms of social justice, and across and within subject domains?
- RQ5 How does the research inform how to represent and model a participative pedagogy of mutuality (Bruner, 1996; Wenger, 1998; Alexander, 2000; Murphy & Wolfenden, 2013) and engage teachers with that pedagogy? This will be addressed through the meta-analysis of data across studies.

NP³ is a collaboration between the Open University, Lancaster University and Manchester Metropolitan University, which is funded by The Society for Educational Studies (SES) and led by Professor. Peter Twining.

This brief report provides **a snapshot** of the digital practices evident in one of the Case Studies that we conducted between June and December 2016, with a summary of emerging findings from this Case Study.

For further details about NP³ go to <http://www.np3.org.uk>

Case Study Overview

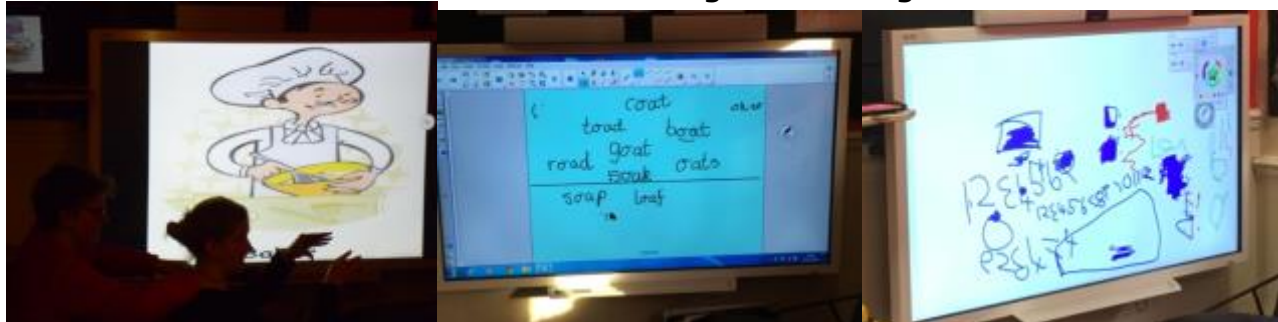
Case Study 5 is an extension of [Exploratory Study 8](#).

The school is a small Community Foundation school, part of a charitable trust, in an urban/suburban area of Northern England. The school is smaller than the average-sized primary school. The majority of children are White British. The school has a lower than average proportion of children with English as a Second Language.

The school caters for children from nursery to Year 6 and has a higher than average number of children on free school meals and identified as having special educational needs. A small proportion of children come from relatively affluent households. The school uses national research from major funding agencies (e.g. Education Endowment Fund) to inform their strategic decisions, including the spending of the pupil premium money.

The school's performance in national tests is good; recent test results show that 52% of KS2 pupils achieve the nationally expected standards in reading, writing & mathematics. The school has received a number of prestigious awards, from national bodies such as: Food For Life Partnership; The British Skills Agency Quality Mark; Healthy Choice; Arts Council. The study took place across the whole school; detailed observations focussed on Early Years and Year 6.

Varied uses of an interactive whiteboard during the morning in the EY classroom



Emerging findings

Interview and observations data show that the school tries to connect to the digital practices that pupils bring to their learning in school. Across subject domains (English and Maths lessons were observed in Y6), there is an effort to create opportunities for children that correspond to their abilities and interests, with emphasis placed on:

- growth mindset and the importance to try to do better and achieve a sense of self-pride;
- e-safety and the importance of staying safe online while enjoying the advantages of internet and social media;
- close collaboration with parents in a number of ways, including a Monday's Coding Club led by a parent;
- arts-based activities that extend the curriculum foci, in collaboration with local artists and with the use of a range of materials;
- strong online presence, including regular blog and Twitter updates showcasing pupils' work;
- use of portable and personal technologies as opposed to static technologies in an ICT suite.

Interviews with pupils showed that they have awareness of the key advantages of technologies used at home and in school and that they use them purposefully and safely.

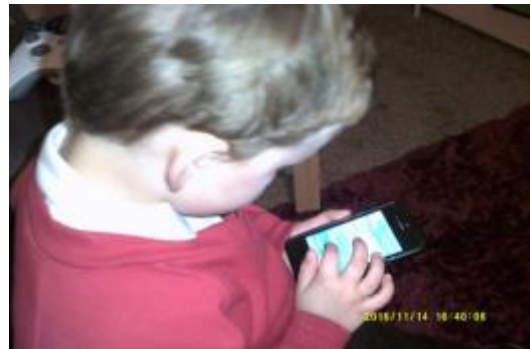
There was strong evidence of frequent and varied use of technologies outside school by the six Log children, mostly for communication and homework purposes.

Pupils' digital practices outside school

Six 'Log children' from Y6 took digital cameras home and together with their parents, they photographed their digital practices outside school. A variety of activities was captured on the cameras, which were later discussed with the children in one-to-one interviews.

Five of the six log children have their own smartphone. The children told the researcher that they use their personal smartphones to stay in touch with:

- friends via text messages (but not using images as these cost extra money);
- parents via telephone (mostly to inform them of their location when they are not at home);
- grandparents via occasional text messages (especially for sending best wishes for Birthdays).



Two of the Log children use home desktop computers to play games such as Minecraft to construct their own houses, towns and "worlds" and to watch YouTube videos to learn about new Minecraft designs.

One Log child shared that she uses her mother's iPhone to look up unknown words in the dictionary and another Log child that he has an Instagram account where he shares pictures with his friends.

The experiences of these Log children were probably not typical of all children in the classroom as they had been selected by the school because they were perceived to be 'doing interesting things with ICT outside school'. In an interview, the Case study teacher in Year 6 said that there are big differences between the amount of technologies some children have at home and the practices they can engage in. Some children don't have access to the internet at home and can therefore only do certain aspects of the homework:

"Sometimes for homework we set them a task like something on anti-bullying. Some of the children they will make little film clips, videos, they will email them in but some children only do a poster. So the technology does impact what they do for homework." (Year 6 Teacher Interview).



The EY teacher explained that the school sends out a Technology Questionnaire at the beginning of each academic year to find out about children's home technology use.

In School

Context

It was clear from the interviews with the school staff, the deputy head and the children, that they are aware of the amount of technologies the school has and that they know that this is not typical of every school in the UK. The children and the staff commented positively on the fact that their school is very well technologically equipped, and they knew that this was thanks to the extra effort made by some staff members, who have managed to obtain extra funds through awards.

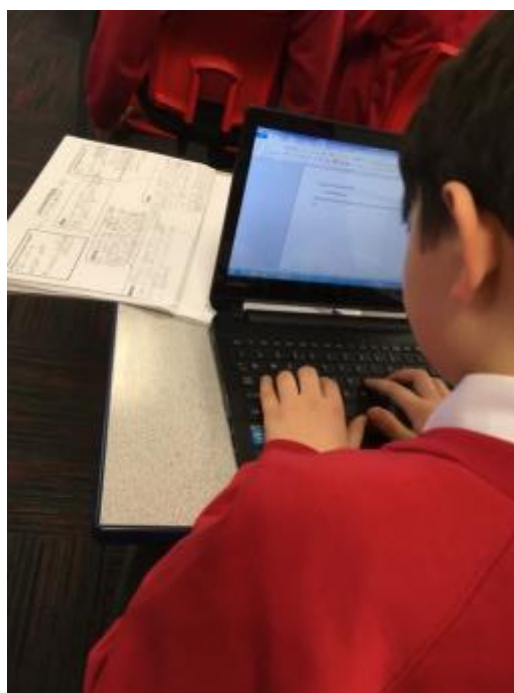
Interviews with the teachers and examination of daily plans showed that there is a clear emphasis on regular coding-related activities in all year groups, but especially in Year 6. The ICT coordinator felt a need for a more optimal balance between supporting children's digital skills in terms of computing as well as digital skills embedded across the curriculum and life. With a national and international emphasis on coding skills, the ICT coordinator felt that skills such as cooking or sewing and other "life skills" are being pushed out and forgotten. "If it was blue sky, I would like to take away some of the rigid curriculum restrictions that we have and have more of these alternative skills put back in." (ICT Coordinator Interview).

There are school-wide measures such as Pupils School Council and children-mediated Golden Time activities with the intention to support children in expressing their voice and communicating their preferences. In terms of ICT, the school supports children's use of a wide range of technologies and runs additional activities to encourage children's independent and agentic use, such as for example the Coding Club on Monday or a course in touch-typing skills. In Year 6 blogging is already part of regular practice as evidenced by the school's blog website and the Deputy Head expressed the wish to see more year groups contributing to the school's website: "I'd like to see more publication of children's work but the children doing it themselves." (Deputy Head Interview).

From the Year 6 and Foundation classroom observations it was evident that the school strives to offer the children learning opportunities that extend beyond the formal curriculum. In the Foundation classroom, the interviewed teacher said that the National Curriculum for Computing guidelines do not reflect the skills most children in their school bring in. Similarly, the nursery teacher described most children's high ability to use touchscreens and computers at an increasingly young age. "They know how to use an iPad, how to search for names, what tab to tap to play a game. We have children coming in saying my favourite toy is an iPad. You know, they already are very ICT-skilled and actually, just as in the old curriculum how important emailing is moved to KS1 now some of the Early Years' targets should be moved." (Nursery Teacher Interview). Consequently, The Early Years teachers felt that their role is to complement children's skillset with less digitally-based activities, including water and sand play, gross motor skills or paper-based book reading.

Vision and digital spaces

The interviewed staff told the researcher that they feel they are confident ICT users and that all their colleagues in the school are also competent ICT users. The teachers help each other out if they don't know how a specific program or user interface works and they often call upon the help of the ICT coordinator. There is a range of technologies in each classroom, with the latest technologies available to the pupils. In each classroom there are eight iPads and an interactive whiteboard. Each classroom has the possibility



to use a bank of notebooks, coding Bee Bots, stopwatches, visualizers or digital cameras. In the Early Years classroom children also have access to a wall-mounted large touchscreen and a music system with loudspeakers.

Teachers plan daily activities with attention to the different technologies they have at their disposal and the ways these technologies might support children's specific skills, such as for example editing a story on a notebook as this is easier than on paper.

The school takes measures to ensure all children can benefit from the technology available to them. There are several booster seats and comfortable cushions available for each classroom to enable children to sit comfortably regardless of their size or height. 1-2-1 support is offered to children who struggle with a certain program as part of the class by a TA. The ICT coordinator regularly responds to children's and teachers' queries and troubleshoots ICT-related problems.

The school actively promotes basic manual digital competences such as the use of all five fingers on the keyboard. They also encourage the children to edit their individual profiles on the school secure internal web server to suit their aesthetic preferences and share them with their classmates.

Individual interviews with the Log children indicated that the children had conversations with the ICT coordinator about e-safety. The school has a website with an online e-safety section for parents and the ICT coordinator holds regular talks with parents about e-safety issues such as children's use of Facebook or YouTube at home. The children are reminded of their log-in details if necessary and they know that they need to keep their passwords safe and not to share them with anyone else.

Example 1 : Understanding how technologies work

The teachers were very keen to help children understand the 'science' behind the way technologies work. As one example in the Early Years classroom, they used metal detectors, that beeped every time they were placed close to a metal object. The use of the metal detectors was a very popular activity in the classroom, available to all children. A group of young boys eagerly searched for all metallic objects in the classroom, including personal objects such as teachers' earrings. The teachers placed various metal objects into the sand tray to stimulate further play and included small magnets on laminated numbers and letters. This was intended to stimulate conversations and use of English and Math vocabulary in a playful environment.

Metal detector in EY classroom



Example 2: Varied and balanced use of technologies

The Maths lesson in the Year 6 class was planned around five activities, supported with a set of different resources available to children at each of five tables. Each activity included a competition element and a different support mechanism (human- or technology- mediated). There was also variety in terms of the challenge and level of reasoning necessary to complete the task and in terms of individual or collaborative problem-solving. The children sit at mixed ability tables for all subjects, including this activity.

Table 1



At Table 1, children could write their reasoning directly on the table and wipe it when they made a mistake. The

children worked in parallel (not collaboratively) at this table, which was adult-mediated, with the support teacher placed at Table 1 to give the children various mathematical challenges and to correct their reasoning.

At Table 2, children worked in pairs and were asked to put the Maths domino pieces in the correct order. There was a stopwatch at children's disposal (one stopwatch per pair of children), which they were asked to use to measure the time it took them to solve each Domino challenge. Given that there were three pairs at the table, the children were asked to compare their times and try to gradually shorten them.

Table 2



At Table 3, the children individually solved various Maths scenarios (concerning fractions) and wrote their responses in pencil on a worksheet, which was handed over to the teacher for marking after the lesson.

At Table 4 the children used iPads with a pre-loaded Maths app. This app displayed in a quick succession various fraction-related questions that the children needed to complete. At this table, children competed against the software, which recorded the speed and accuracy of their responses and issued them with a 'well done' message or e-certificate if they won a particular challenge.

At Table 5 the children used the school's online maths learning software, which they could log in to from anywhere, including home. Children at this table were given challenges that they needed to complete at home as part of their homework.

Table 3



Table 4



Table 5



The children rotated around the tables and the teacher used an online stopwatch displayed on the interactive whiteboard. There was a quick transition between activities, with each group spending fifteen minutes at each table. At the end of each activity, the children needed to ensure that the table's activities were in order, boards were wiped and that the children logged out (but did not switch off) their computers and iPads.

