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‘Reading is my passion’: Exploring the use of e-readers as an intervention strategy for boys who are struggling to read.

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Cranford Community College near Heathrow attracts students from diverse backgrounds. Senior leaders at the school are working with Gaia Technologies, a learning organisation, to improve learning using innovative tactics. Gaia is committed to systemic change in teaching and learning through the effective embedding of digital technologies in practice and policy. This approach is intended to address the situations that frequently arise when new technologies are bought by a school but their full value is not realized. The aim of this programme is to ensure that the investment the school has made in digital technologies is realised in terms of improved learning. Gaia also invests in and promotes innovation, so that young people experience learning activities which will best prepare them for life and work in a digital world. Through the Continuing Professional Development (CPD) & Training Services (TS) arm Gaia is working at the interface of curriculum content, pedagogy and technology to help educators transform learning and teaching. As a result of this partnership several projects are underway at Cranford Community College.

Some of the students, particularly some boys, are still struggling to read fluently and comprehend text when they arrive in the school at 11 years. As a result, in this case study, we will look at improving reading standards.

Improving reading

The school’s challenge was that the Key Stage 2 standardised scores for reading indicate that the current year 7 cohort, particularly some boys, were working below national expected standards. The boys identified for this particular intervention with the e-readers all achieved a standardised score between 80 and 93, through more intense investigation it has been identified that reading fluently and comprehension are the main challenges for these students.

With Bernard Dady from Gaia, the boys’ English teacher, Kerry Mulhair explored the potential of a pilot using e-readers in encouraging boys to read.

The project had posed three questions:

- Does the use of e-reader technology support boys in an intervention context?
- What are the results of assessment about the impact of e-readers on reading fluency?
- Is there evidence that reading standards can be improved through the engagement and motivation stimulated by e-readers?
- Do reading scores take precedence over the teachers' judgement?

In the first stage Bernard and Kerry set up a needs analysis meeting to ascertain the potential for e-books and e-readers in the literacy classroom. In this meeting, they identified the appropriate technology, services and book purchase methods. arranging to be equipped to set up the trial to run between October 2016 and February 2017.

Professor Christina Preston, MirandaNet Fellowship, was engaged to help them with the research methodology, the validation and the writing up. As an associate of MirandaNet, De Montfort University, Gaia Technologies has access to the latest methods of assessing the impact of innovation on learning. The evidence guides their development and deployment of tools for learning.

This on-going remote and face-to-face research support was drawn on by Kerry in developing her project and collecting evidence of impact on reading fluency and motivation. This research report written in collaboration with Bernard and Kerry looks at the evidence of this small pilot and assesses potential for the wider application of e-readers in the school.

The methodology

Kerry selected 12 boys from Year 7 who were known to struggle with their reading. Appropriate permissions to engage in this research were organised by the school. None of them had English as a first language. A Romanian and a Bulgarian were joined by four Pakistanis, four Indians, a Tamil and one with a white and black mixed parentage. They all took the Salford reading test as a baseline. Out of 40 marks 10 boys scored 10 or below which is the age expected at KS2. The two others scored 13 and 15. Their reading ages were assessed to be around 6 years old. All the boys identified were below national expected standards ranging from 6 years to 10 years 6 months. In their first reading assessment in Key Stage 3, all twelve boys achieved between 7 and 15 marks out of a possible 40 placing them in the bottom quartile of the year 7 cohort.

The control group of six was randomly selected. Professor Preston then interviewed the boys about their reading before half of them began to use the e-readers. She assured them that their contribution would be anonymised. At the end of the two-month reading period Professor Preston returned to interview the boy with Kerry and to discuss with her impressions about the value of the pilot. The reading test was also applied again.

Findings

Summary of pre-pilot interviews

At the start of this pilot I interviewed the boys individually in an office where they could confidently talk in private about their reading experience.

Overall these boys who had been identified as needing help with their reading challenged my assumptions about how enthusiastic they would be about reading. They did not appear to be reluctant to read books although they found the process hard and were clearly enjoying their English lessons. One boy said that his passion was reading and another carried 3lbs in weight of his favourite books in his backpack every day so that he could refer to them. Another boy liked to read when he was bored especially taking the bus. One read before sleep and a sister read to another boy at night. Two boys were listening to books on their iPods.

I was interested to build up a picture of what interested these boys both outside and inside school. Sports and computer games were popular on both sides of the school fence. Other popular subjects in school tended to have a strong practical element as might be expected: art, computing, drama and science practicals.

*All twelve boys spoke English as a second language which suggests that their low scores were not necessarily linked with learning difficulties but simply their knowledge and understanding of the English Language along with opportunities for language practice and language acquisition. One boy, making rapid progress, had only been in England for one year. The main first languages spoken by the group were: Arabic, Urdu, Tamil, Punjabi, Romanian and Polish and some spoke more than two languages. Several of them were the most fluent speaker within their families and some were responsible for reading in English to their parents whose English was not as confident. In particular, they read the newspaper to their parents, in one case, *The Times*. Two boys reported that their parents were fluent in English, used a computer and were able to help with homework.*

*In terms of reading books, nine of the twelve boys preferred fact to fiction especially real life stories, travel and studies on how other cultures live. Dinosaurs and other animal books were popular. Several were keen on books with pictures especially comics with boy appeal. Most used the library and they were able to assemble a reasonable list of books they read at home: Michael Morpurgo: *Kensuke's Kingdom* and *War horse*; Jeff Kinney: *Diary of a Wimpy Kid*; Roald Dahl: *The Twits*, *BFG*, *James and the Giant Peach*; David Walliams: *Gangster Granny* and *Mr Stink x4*; Michael Rosen: *Going on a Bear Hunt*.*

*Although they were aware they might need to read in order to get a good job they admitted they did not find reading in English easy. One boy said he often felt confused and struggled to break words down. Some books were seen as particularly difficult: *100 Word Story*, *The Peach*, *The Stink*, *Tom Gates* and *Harry Potter: The Cursed Child*.*

Kerry had drawn on young people's interest in celebrity culture by choosing a book by David Walliams. All the boys knew of him from his roles in the television programme, X-factor and Britain's got Talent as well as his You Tube footage. They knew that he is famous as an author of funny stories that had pictures and focused on boys' pursuits. One boy liked the size of the print as well. They knew other Walliam's books like The Boy in the Dress and The Billionaire Boy.

One boy thought he might find the chosen pilot book, Mr Stink, childish whereas another was looking forward to meeting some interesting characters and using his imagination to bring the book alive. This boy said that he considered reading from a book to be really important for his education and, in fact, found reading from a screen more difficult.

Post pilot interviews

For the final interview the boys were split into two groups: the control group who had read the book, Mr Stink, and the pilot group who had used the e-reader. Kerry and Christina interviewed the boys together.

Control group

The control group had not finished the book over two months and they did not wish to continue in the pilot. They were subdued and apologetic in mood. One boy tried to explain his reluctance to tackle The Stink by saying he didn't always feel in the mood to read in the morning when the lesson took place. He thought the book was rather too young for him, perhaps for ages 8-14 despite falling into this category. He also thought the vocabulary was challenging. He conceded that the themes might be relevant to adults as well and that the story contained an important central message. He also explained that the fact that the book was funny helped in understanding a serious message. However, he did feel that the story 'dragged along and became annoying.' Another boy explained that he 'tends to forget the storyline'. The Romanian agreed that he found some vocabulary difficult and would look the word up later on the computer. However, this was inconvenient and interfered with the reading flow. He liked the book, despite his difficulties and thought the important moral message was 'not to judge a book by its cover'.

The e-reader group

The contrast in the demeanour and enthusiasm of the second group was palpable. This group had already finished their books and were keen to get onto the next one. All of them expressed a preference for using the Kindle above reading the book although the device could run out of power whilst reading and that spoil the mood.

Despite this small disadvantage, they were enthusiastic and articulate about the reasons why they preferred reading an e-book, starting with the fact that they could not 'damage the pages'. The most popular reason was being able to use the dictionary on the screen if a word was unfamiliar. The meaning was just one click away and did not interfere with the flow of the story, a feature very useful for children for whom English is an additional language, helping to immediately expand their vocabulary:

'If you don't know a word you can use your dictionary to find out what the word means so if you didn't know what a word meant you easily check what it means'.

'I would choose the Kindle [for reading] because if I don't know the word, I just touch the word that I do not understand. Then the dictionary will pop up and there you can know the word you do not understand'.

'If you don't know a meaning of a word you can click the word and it will tell you the definition, instead of you flipping through the pages looking for the word.'

One boy said that he understood the words better in the e-book text than a book especially using the dictionary function. He was now trying to use these words in his own writing. He feels he now 'knows the meaning of more words' following the project.

The boys also recommended the feature that allowed them to hear the pronunciation of the word so that they could be confident reading aloud. They also liked the feature where the book was read aloud to them as they followed the text

'If you need help for reading you could use the audio.'

'It has audio which is the voice recorded about the book you read and you can read while listening.'

They also liked the feature where the book was read aloud to them as they followed the text. The team had downloaded the audio specifically for this purpose.

'I would prefer to read and listen on a Kindle 'cos when you listen it entertains you a lot so that you will laugh aloud. The Kindle can keep kids calm instead of them messing about. Just put a story on for your kids and plug the headphones in and let them enjoy the story'.

One boy commented that he enjoyed hearing the character the actors put into the voice and another felt he could understand the character's emotions better when listening to audio. This boy had only been in the UK for a year.

In terms of functionality they thought it was easier to keep their place in the book because this was 'automatic'. Another interesting comment was that the Kindle preserved their 'street-cred'. Comments included:

'It doesn't matter what my friends think about my choice of book as they do not know the title'

'My friends are unaware of what I'm reading – they think you're listening to music on the bus but you're actually listening to the audio of a book.'

One of the boys found the experience so rewarding that he has now subscribed to an audio book service.

The reading scores

All the boys had improved their scores which is an expected effect of giving special attention to a topic. Indeed, as Kerry predicted half way through the pilot, there was no substantial difference in scores between the control group who had read the book and the other group who had used the e-book.

D.O.B	Ethnicity	Reading Age Salford reading test September 2016	Salford Reading test repeated post project March 2017
02/05/2005	Pakistani	10yrs 6	10yrs10
13/04/2005	Indian	6yrs 11	7yrs 10
25/12/2004	White Other	6yrs	6yrs9
03/10/2004	White and Black African	10yrs 6	10yrs10
01/10/2004	White Other	10yrs 6	10yrs10
19/12/2004	Indian	10yrs 7	10yrs10
01/01/2005		9yrs 7	10yrs2
22/07/2005	Pakistani	10yrs 6	10yrs10
22/06/2005	Pakistani	10yrs 6	10yrs10
24/04/2005	Pakistani	10yrs 2	10yrs10
18/11/2004		10yrs 6	10yrs10
22/03/2005	Sri Lankan Tamil	10yrs 6	10yrs10

The teachers' perspective

At the end of the pilot Kerry observed,

'Most of the students in the Kindle e-reader group have now finished and are writing a review of the book. They have generally loved reading from the Kindle. One student asked if he could read 'Gangsta Granny' next because he 'loved Mr. Stink'! The book group however are significantly behind with some only half way through the book. I was even tempted to send the book home over half term to encourage them to finish but felt this would disturb the experiment.

I'm going to re-assess after half term but to be honest I don't think we'll necessarily see much of an improvement in their ability but the Kindle group are most definitely more engaged and all seem to want to read more on the Kindle.'

Discussion

Although the project is still in pilot several points have emerged that have justified the aim of exploring the use of e-reader technology to support boys in an intervention

context. Secondly the team have used the evidence of scores, of qualitative evidence from interviews and of teacher's judgement to assess the impact of e-readers on reading fluency and motivation.

Evidence has emerged from the formal assessment and the interviews to answer the four questions. Firstly it is clear that the use of e-reader technology does support boys in an intervention context. At a next stage, it would be interesting to look at whether the e-readers have the same effect on girls.

Secondly the results of the formal assessment about the impact of e-readers on reading fluency have been inconclusive because this has been a small and short pilot. All the boys have improved because of the intervention but there is no reliable difference between the control group and the e-reader group. This was predicted by the teachers who knows the group well and does not invalidate the other judgements that can be made on the basis of the evidence.

These judgements although valuable are all impressions of the impact. Does the lack of a clear scoring gap matter? Kerry and Christina's observation of greater enthusiasm in the e-reader group for *The Stink* would, in fact, probably lead to increased scores if the e-readers continue to be used. What was pleasing was this group's keenness to read other books as they had finished *The Stink*.

The third question was whether the pilot produced evidence that reading standards can be improved through the engagement and motivation stimulated by e-readers. The circumstantial evidence was clear to the researcher and the teacher. The difference in attitude to reading in the e-reading group and the control group was marked. The control group had not finished the book and did not want to continue the morning reading session whereas the other group were eager to go on. The e-reader group enjoyed listing the advantage of the e-reader and built on each others' opinions about how this tool had helped them understand the book and the underlying meaning. They felt that *The Stink* offered an important message about not 'judging a book by its cover' – rather a good phrase in the circumstances.

All six in the control group had not finished *The Stink*. This would appear to be caused by the fact that they did not have the use of an e-book. In which case this short and small pilot augurs well for the use of e-books in the future for reluctant readers. However, at this stage, keeping the control group become an ethical problem because each boy only has one education. Since the reading flow and motivation have been improved by using the e-reader this device has not been withheld from the control group. And in the next stage that is underway the boy who said he would only read books has bought himself an e-reader.

Finally, should the project team have allowed the reading scores to take precedence over the teachers' judgement? The answer in this report is no because the scores only measured a fraction of the book reading experience. The e-reader group displayed enthusiasm, keenness to complete and move on, ability to discuss finer points and real pleasure in reading. The control group were happy about how they were being taught and

what they were learning, but they lacked the ownership and keenness that marks a pupil who is moving towards independent reading. The sooner the control group are supplied with e-readers the better.

Conclusions

The boys were pleased to be selected for this pilot and all of them were confident in exchanging information with an unknown adult. It was a credit to their teachers that they were unanimously of the opinion that the literacy lessons were engaging their interest and that their literacy issues were being addressed.

The results of this pilot were better than expected. The first interviews with the boys indicated the real obstacles they had to overcome in order to read in English. Many of their challenges were not necessarily because of ability but because of lack of exposure to the English language at home. This may explain the genuine interest and eagerness to read that was expressed in the e-reader group as well as the help they found in hearing the book read and the opportunity to look up the meaning of words without interrupting the flow.

The greatest pleasure for the researchers was the opportunity to discuss books with the boys using the e-reader who relished learning in this way and were able to analyse what made the experience special. But their English lessons in general had clearly generated enthusiasm for both the language and the literature.

Teachers undertaking small pilots in their classrooms cannot expect reliable quantitative measures of impact but this should not prevent them from undertaking practice based research. Although enthusiasm is not quantifiable or expressed in scores it was pleasing for the teacher and the researcher to observe that this pilot had made a difference to the boys' willingness to overcome the reading challenges they faced when they used an e-reader. The fact that they enjoyed the multimodal experience of pictures and sound in understanding a book indicated that this method of transmission accorded with their wider experience of story in the digital age.

These results will be shared with other practitioners in the MirandaNet Fellowship and in the Gaia community to encourage other teachers to explore the potential to improve learning and to have confidence in their judgement about what works.

Appendix

The partners

Technology Enhanced Teaching & Learning

At Gaia Technologies our approach always starts with teaching and learning. We are committed to providing teachers with access to reliable and intuitive technology which will help them deliver exciting and relevant learning experiences and lessons. We will pragmatically support use of technology to better deliver that which is proven to work in improving progress and raising standards. However, we will also help innovate so that young people experience learning activities which will best prepare them for life and work digital world. Finally, we are working at the interface of pedagogy and technology to help educators transform learning and teaching.

We want to help students learn more effectively:

- Through access to experts and as critical users of digital information
- By working together and learning collaboratively
- By creating and being creative with digital media
- Through enquiry, research and exploration
- By practising and applying in interesting contexts
- By receiving feedback through purposeful assessment
- In, around and beyond school.

Innovation and Partnership

At the heart of our approach lies commitment to **developmental partnership**.

As education technologists we seek to help teachers blend their pedagogic and subject knowledge with insight into how ICT can enhance and improve learning. We are about development journeys - identifying when and how ICT adds value and makes a difference. At the core of our professional development offer is commitment to improving the digital literacy of staff and students, not only to improve teaching and learning but also to ensure that we prepare young people for life in the knowledge and digital economies.

This involves doing some things better through effective use of ICT. It also involves doing things differently - innovating with advanced technologies and recognising that ICT is driving change in the way that people learn and work.

Background

The E-Reader project is a simple piece of practice-based research being undertaken by Kerry Mulhair to assess if there is any discernible impact on reading behaviour and reading standards when a student uses an e-reader instead of a book.

The project is supported by Gaia Technologies through:

1. Supply of six Amazon Kindle Fire devices

2. Deployment of Professor Christina Preston to support Kerry with the research process and data collection (2 days).

The project is funded through the professional development fund within the Gaia contract.

The project will target boys who have been identified as needing additional reading support through the Colleges intervention programme. 12 students have been selected through analysis of available reading assessment data.

The year 7 boys will be reading Mr Stink by David Walliams. The control group will be reading from books whilst six of the twelve students will be reading using the Kindle devices.

The project will start in November 2016 and is likely to run until February 2017.

Data Collection

No students will be identifiable in the project report. Any data used in the project will remain confidential to the project team (Christina Preston, Bernard Dady and approved staff at the College).

Data will be collected as follows:

- 2 baseline reading tests & Y7 Midys results
- Baseline student interviews with Dr. Preston
- Students' birth month
- Reading speed data collected via a student reading record
- 2 reading tests repeated in December and February (used to assess progress with reading standards)
- Final student interviews with Dr. Preston

The data will be used to assess reading progress of the e-reader and book groups and to assess if there is any discernable difference in reading behaviour, standards or attitudes.

The data will be presented in a short research report designed to inform practice in Cranford Community College. With College's permission Gaia and its partner MirandaNet would be keen to publish any significant findings to our wider community of practice. The teacher will be awarded a MirandaNet Fellowship and the pupils will receive a World Ecitizens' certificate

Report Structure

1. Context and description of baseline evidence
2. The research process
3. Findings– impact on student reading behaviour, attitudes and standards
4. Discussion
5. Conclusion
6. Recommendations

Target date for publication March 31st 2016.