



Stichting NIOC en de NIOC kennisbank

Stichting NIOC (www.nioc.nl) stelt zich conform zijn statuten tot doel: het realiseren van congressen over informatica onderwijs en voorts al hetgeen met een en ander rechtstreeks of zijdelings verband houdt of daartoe bevorderlijk kan zijn, alles in de ruimste zin des woords.

De stichting NIOC neemt de archivering van de resultaten van de congressen voor zijn rekening. De website www.nioc.nl ontsluit onder "Eerdere congressen" de gearchiveerde websites van eerdere congressen. De vele afzonderlijke congresbijdragen zijn opgenomen in een kennisbank die via dezelfde website onder "NIOC kennisbank" ontsloten wordt.

Op dit moment bevat de NIOC kennisbank alle bijdragen, incl. die van het laatste congres (NIOC2025, gehouden op donderdag 27 maart 2025 jl. en georganiseerd door Hogeschool Windesheim). Bij elkaar zo'n 1500 bijdragen!

We roepen je op, na het lezen van het document dat door jou is gedownload, de auteur(s) feedback te geven. Dit kan door je te registreren als gebruiker van de NIOC kennisbank. Na registratie krijg je bericht hoe in te loggen op de NIOC kennisbank.

Het eerstvolgende NIOC vindt plaats op 18 maart 2027 in Arnhem en wordt georganiseerd door HAN University of Applied Sciences.

Reacties over de NIOC kennisbank en de inhoud daarvan kun je richten aan de beheerder:

R. Smedinga kennisbank@nioc.nl.

Vermeld bij reacties jouw naam en telefoonnummer voor nader contact.



Dr Christina Preston
Founder of MirandaNet Fellowship
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with
Dr John Cuthell,
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**Bring your own device (BYOD)
Bring your own technology (BYOT)**

**.....but move forward to Flipped
Classrooms**

'Oh brave new world that has such people in IT'
Miranda In 'The Tempest', Shakespeare.

- **Founded in 1992 to offer a not for profit community of practice to educators who wanted to support each other in learning about the potential of digital technologies and developing innovative approaches to learning;**
- **free resources on the website provided by members for members and for a global audience;**
- **68,000 unique website visitors last year, with an average of 2 visits each, downloading around 7.5 pages per visit;**
- **MirandaMods: events where professionals can share theory and practice on subjects agreed by the membership: www.mirandanet.ac.uk/mirandamods**

MirandaNet members join for free as a scholar, becoming a Fellow on publication of an article for teachers and moving on to Senior Fellow and Ambassador as more voluntary effort is put into the sustaining and growing of the community.

MirandaNet members

800 members in 80 countries on six continents who are committed to learning from each other about innovation in education

Members are researchers, teacher educators, senior managers, practitioners, policy makers and, companies who are committed to improving education.



BYOT/BYOD/Flipped Classroom

- **3 very different schools: private school in London; state school in a rural area; state school in a run-down coastal town**
- **3 MirandaNet Fellows with Masters and Ph.Ds**
- **Advice from pupils:**

Teachers should be given these devices before us

Teachers should be given some training about what these devices can do

Teachers need some advice about how to manage these devices in class

Teachers should work with us to learn more

What not to do: get them out from a cupboard for half an hour every day!



A private school in London

The historic chapel built when the school was founded in 1834.



Starting the project in the sixth form?

Private school, London: Impactx1

The project has deliberately been started slowly in the Sixth form because the risks to be avoided from the organisational point of view were:

- A sudden influx of new devices might be too challenging for teachers;**
- Too sudden introduction of devices might place strain on networks;**
- Theft and loss of devices might occur and appropriate use codes be abused.**

The impact on pupils has been greater below the sixth form where they lobbied to be involved.

From the point of view of staff the barriers or obstacles are:

- **Teachers' fears of lack of control or impact on discipline:** as a result teachers can decide at any time whether devices are to be used in class, or not.
- **Teachers' feeling overwhelmed:** for this reason BYOD was initially limited to 6th form and there is still no enforced curriculum use.

From the point of view of the digital leaders

Personal organisation and research was a major benefit, but distraction in class was a concern of the digital leaders.

Private School : Impact x2

Three teachers mentioned particular impacts.

- A MFL teacher was disturbed by **inappropriate exchanges** from students abroad in a class project.
- **Financial advantage** can be gauged from a Computer Science example. The department can now afford for each student to work on their choice of computer language using a free or very low cost app
- The potential impact of BYOD/BYOT in **facilitating collaborative learning could be as great as the expected impact on independent learning**. Ultimately the manager supports a shift to Flipped Classrooms and suggests an action research programme for staff might increase the opportunities to rethink the school's teaching and learning policies.
- **Current assessment** is a major barrier, however, in an academically orientated school

Key lessons - Private School x1

- All teachers must be acquainted with the **Code of Conduct** that pupils' must sign if working online;
- **While pupils are comfortable using personal devices in the other aspects of their lives, they appear to struggle a little with integrating this into school/ learning;**
- **Flexible environments** are important in making it easy and workable to have and manage own devices in and between classrooms;
- **More public communication** with pupils and parents in the next stage to ensure their enthusiasm.



Collaborative working desks with iPad connections and Apple tv in the 6th form centre, meeting rooms and assembly halls

Key lessons- Private School x2

- The pupil focus group agreed that some teachers in the pilot were not aware that time-wasting activities were happening. **More teachers need appropriate strategies to deal with these behaviours including getting control early and moving around the classroom.**
- The pupil focus group also thought that there should be more acknowledgement at the start of the next stage **of tech-savvy pupils** who are keen to be a resource for staff and pupils.
- **Overall training about the technicalities should be balanced in the next stage by more formal training about classroom management and pedagogical advantage.**

A state school in rural Surrey



Rural town: impact

The 32 staff with the first iPads are including pedagogy in their deliberations about the value of these devices

Impact on staff

- **A well-organized trials plan** was communicated in an engaging way to parents who are invited to discuss the results with their children. Subjects where interesting practice is emerging are: PE, Information and Communications Technology and Geography.
- **In History a comic strip** designer and book creator apps 'engaged the student's creativity whilst keeping them focused on the content of the curriculum. This helped students who are visual learners to remember key terms and concepts more readily.'

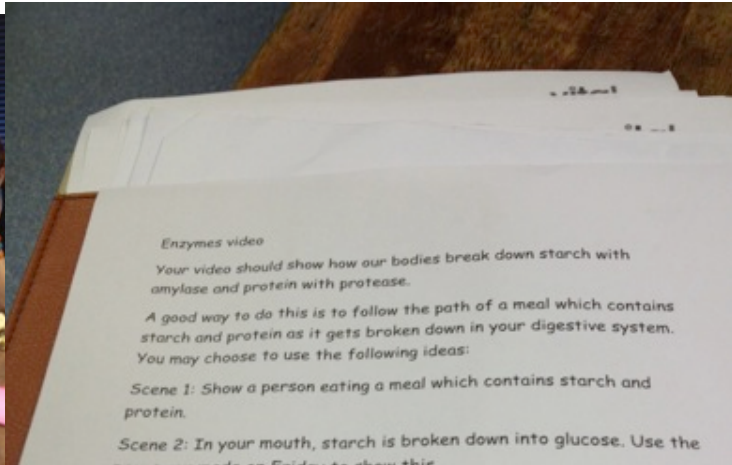


In History a comic strip designer and book creator app ‘engaged the student’s creativity whilst keeping them focused on the content of the curriculum.

‘This helped students who are visual learners to remember key terms and concepts more readily.’ said the teacher.



SEN pupils and students with behavioural problems have responded particularly well to the use of iPads as a personal tool.



Science: Using the iPad to make a video about the action of enzymes using paper props was motivating for Special Needs students

Rural town: impact

- **Teachers view positively** the move to use these tools in personal administrative tasks: for example registration and email on the move; note taking; and, resource collection.
- **Impact on the school/organisation**
- The results of the first pilot will be used to make agreed alterations to policies on teaching and learning, appropriate use and e-safety policy.
- **Impact on pupils**
- Data is still being collected on the impact, but we are having to extend the project to Year 10 because of **parental and student pressure**
- **Pupil reporters for the school news stream** have found the job easier and pupils in the focus group welcomed opportunities to help the teachers”

Key lesson: rural school x1

- **Research is essential if a project that promotes change is to succeed.** The viability of the plan was researched over a year and a half by investigating research papers, videos, forum discussions supplier demos, exhibition show products, the E-learning foundation, technology conferences and visits to schools where similar programs have been implemented.
- **The iPads pilot fits into a long-term strategy to put more responsibility in the hand of the pupils for learning.** Ownership of the iPad has meant that each teacher also experiences more ownership over changing practice from the classroom perspective.
- **Do not underestimate the emergence of technical issues as the project progresses** and allow time to sort these out and orientate the technical team to be able to work with new technology in new ways.

Key lesson: rural school

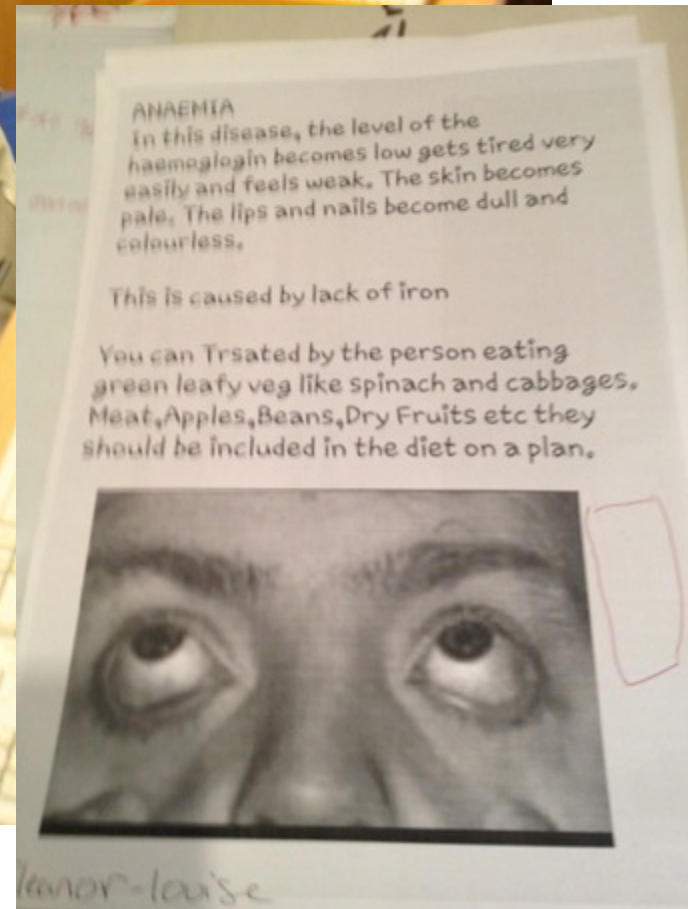
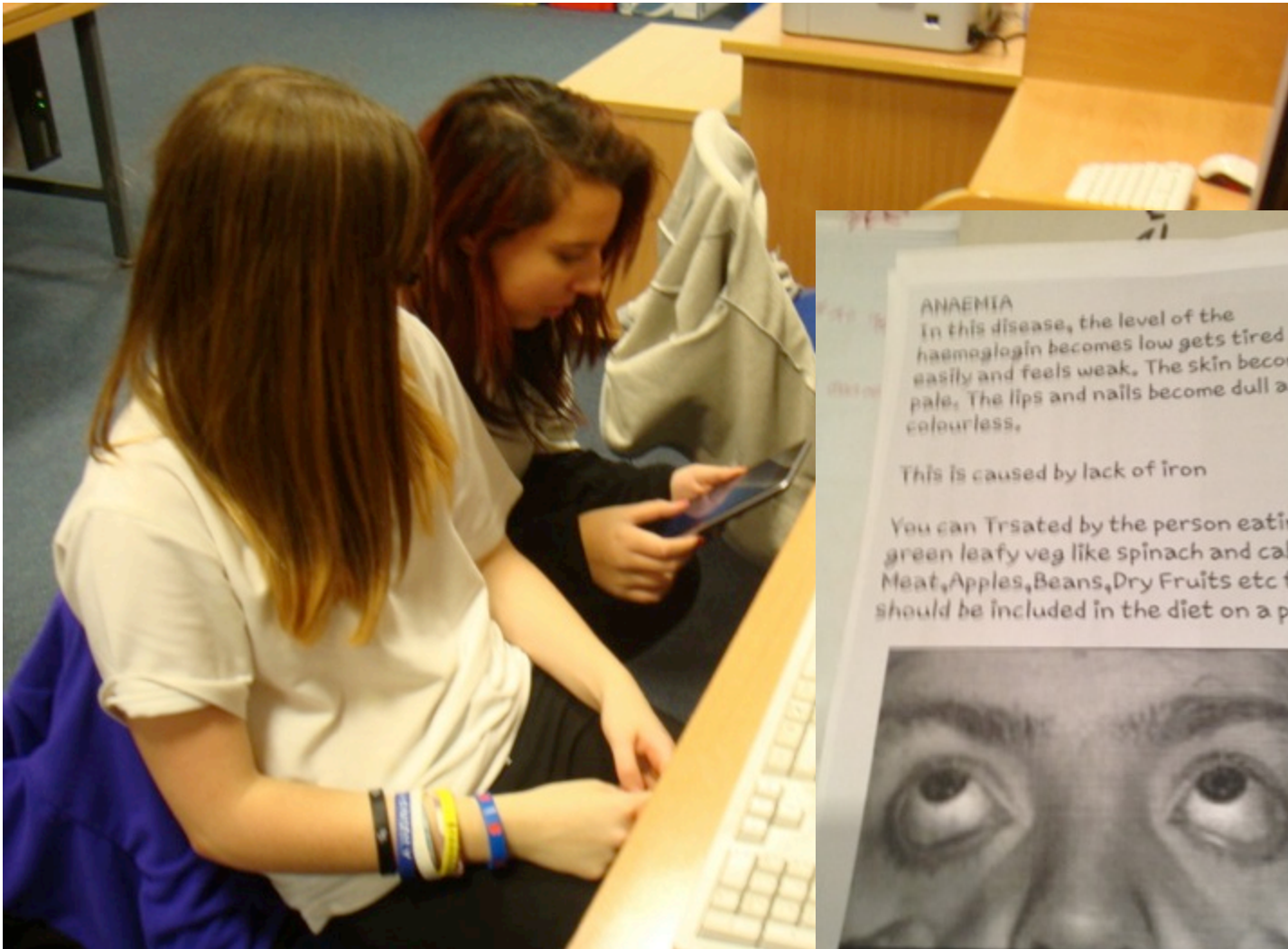
- **Communicate sympathetically with parents and staff members who are concerned about league tables and academic rigour.** The current assessment environment does not encourage the changes in teaching and learning that are pursued in this project.
- **Debate the wider and broader aims of education within the staff** because at some point the whole staff will want to consider whether they are willing to adjust **the theoretical underpinning** that informs their professional life and adjust school policies on teaching and learning.



A state school in a run-down coastal town



Figure four: registration made easier



Pupils researching on the internet to make a poster about anaemia in a science lesson

Coastal town: impact

Organization: learning policy developing slowly

Based on teachers' and pupils' observations in the pilot a **teaching and learning framework** that supports the use of devices is emerging, **but currently this is quite limited**. Staff plan to widen involvement and share insights in order to ensure the richness of this document. **The timescale envisaged is about another year.**

Progress in the school community about the value of devices

Survey important, in ensuring that all members of the school community are aware of the benefits and issues relating to BYOT/BYOD

The enthusiasts at this point who are making progress in developing a code of conduct to be discussed with the community as the next stage. Pupils and parents will be included in this process.

Hard evidence of the impacts of BYOT/BYOT on teaching and learning.

Not well advanced. The pupils and the teachers can provide **convincing anecdotal evidence that changes in performance, engagement, motivation and behaviours have taken place.**

Main results for staff so far:

- major impact on their lesson preparation time because they can use the tablets in transit;
- administrative tasks like registration are easier;
- ease of use in classrooms because of significant time savings over the use of PCs.

More systematic action research now need to take place to confirm that BYOT/BYOT can impact on learning outcomes as well

Coastal town - key lessons x1

Working slowly and inclusively in pilot mode has insured high expectation of success in full implementation over the next year. Some key points have arisen for inclusion in the emerging policies:

Research into ownership was essential in planning the pilot and also in engaging staff, pupils and parents. Ownership of devices at 38% was lower than expected and has slowed up progress. Provision must be developed for students and staff who cannot fund their own device;

Currently some staff still ban the use of devices in their classrooms despite changing policy;

According to the pupils more staff need their own devices and specific training in order to ensure a new teaching and learning policy is embedded. Pupils have offered to teach the teachers informally;

Coastal town - key lessons x2

Wifi is essential through the school if take-up of BYOD/BYOT is to be improved. An affordable solution has now been found but the absence of overall wifi in the pilot was a barrier to change;

Pupils using their own hotspots where wifi is not available has raised concerns about how the school will control what websites pupils are accessing;

The Senior Management team needs to trial more thoroughly key online administrative and teaching software as poor performance dampened enthusiasm for the pilot amongst staff and pupils.

Key questions that now need to be investigated

- How does the use of personal hotspots by pupils affect responsible use in the school?
- What are the best methods for engaging and motivating reluctant teachers to consider changes in their practice?
- What level of on-going support is needed: teacher pedagogical support, technical, student skills etc.
- What should be the balance between informal and formal CPD for teachers?
- How much should the teachers know about pedagogical theory in this area?
- What theories of project management are applicable in this school?
- What commitment should there be to Flipped Classrooms?
- What about Google and ownership of materials?
- What about the challenges in schools creating their own resources?

Dear Dr. Preston

I just wanted to add my two cents on the subject before I go on with the portfolio – quantitative data is always best accompanied with some opinions!

I've always been quite sceptical of using digital devices within education, because I believe mixing entertainment and work is dangerous, and requires a certain level of self-discipline.

However as I write this portfolio, I've taken time to reflect on my use of the devices.

As a student, using digital devices has very obvious advantages: I can write up class notes and assignments much quicker, and add to them with internet research. I can share notes with other classmates very easily, and I can organise everything in one place: calendar, notes, assignments, e-mails, diary – everything that would otherwise require large, unsightly folders and messy piles of paper. The ability to keep organised and in control of everything so easily relieves a huge amount of stress, particularly as I'm involved with a lot of extra-curricular activities. There are also a vast, and growing, number of apps and programs out there designed to aid

Nevertheless there are also great dangers – and I am very weary that if digital devices are not correctly used in education: both by students and teachers, then this can have a very negative effect on learning.

I hope this is of use,

Introduction to a journal by a digital leader of 15 years old.

Join a MirandaNet research group?

Many teachers keen to start action research projects

Are you too?

Already a meeting in March

Would you like to join a research group and conference

- **September, 2013, in Bedford?**
- **January 2014 in London?**

You can find the presentation here

www.mirandanet.ac.uk/researchexchange/keynotes-and-papers/byodbyot-towards-flipped-classrooms/