Personal Inquiry:
Designing for Evidence-based Inquiry Learning across Formal and Informal Settings

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T·L·R·P Technology Enhanced Learning

E·S·R·C ECONOMIC & SOCIAL RESEARCH COUNCIL

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Introduction – main objective

to design new educational methods of scripted inquiry learning,

implemented across devices

to evaluate their effectiveness in helping young people

to understand themselves and their world through a process of active scientific inquiry

across formal and informal settings."

Partnerships

- Open University, UK
  - Oakgrove School
- University of Nottingham, UK
  - Hadden Park High School
- We have run 3 set of trials
  - themes: "myself" & "my community",
  - for the last trials we'll swap themes.
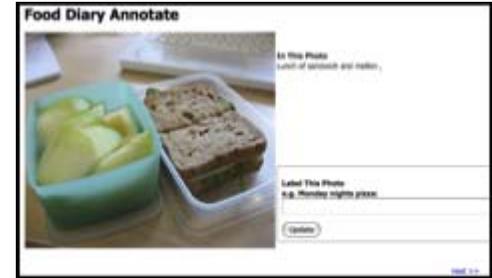
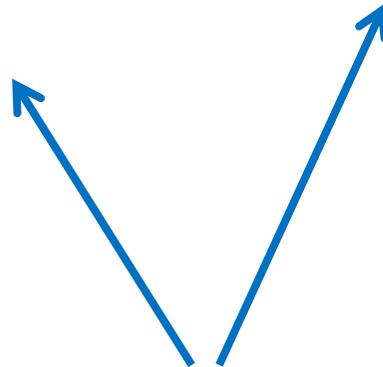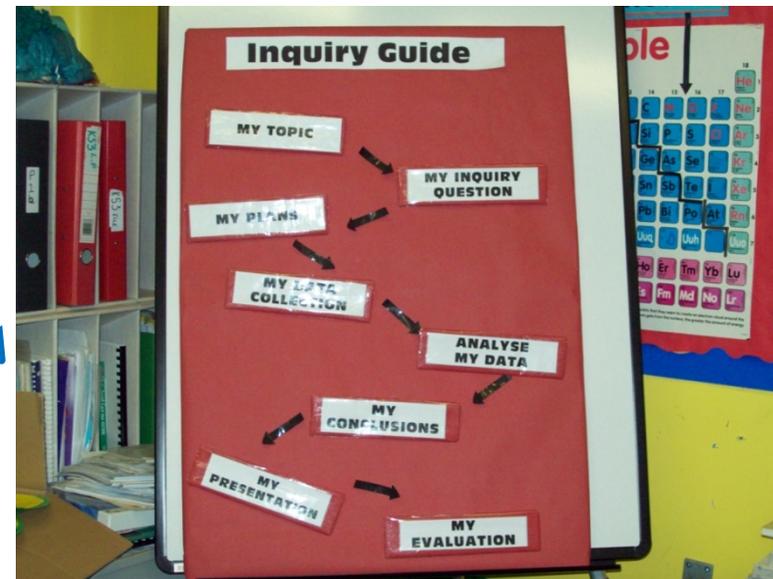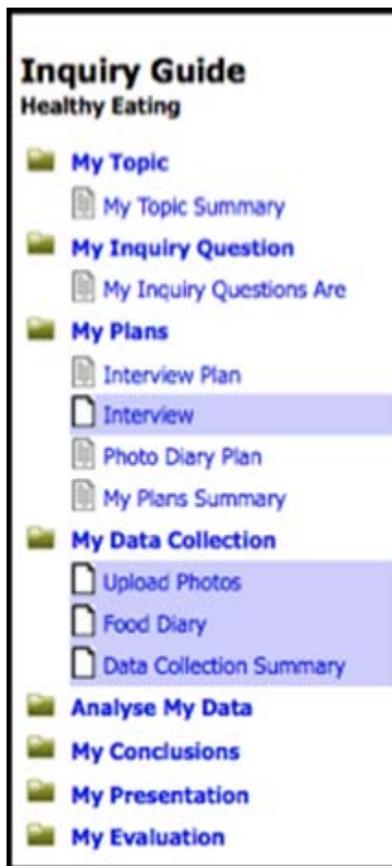# HEALTHY EATING:
NOVEMBER 2008

Theme: **myself**

with Hadden Park High School

Research Question:
How does the PI toolkit scaffold and enable the *Personal Inquiry learning approach*?

Personal Inquiry learning approach

Inquiry Guide
Healthy Eating

📁 **My Topic**
　📄 My Topic Summary
📁 **My Inquiry Question**
　📄 My Inquiry Questions Are
📁 **My Plans**
　📄 Interview Plan
　📄 Interview
　📄 Photo Diary Plan
　📄 My Plans Summary
📁 **My Data Collection**
　📄 Upload Photos
　📄 Food Diary
　📄 Data Collection Summary
📁 **Analyse My Data**
📁 **My Conclusions**
📁 **My Presentation**
📁 **My Evaluation**

Pupils to understand where they are in the inquiry process

November 2008: Healthy Eating

- 9 lessons in 3 weeks **science** curriculum
- 30 pupils, 14 years old
- Equipment taken home for the whole period
- **Inquiry Questions:**
  - What **nutrients** do I eat?
  - Do I eat **enough nutrients** to be **healthy**?

Nov 2008: Technology

- Asus running the PI toolkit
- Camera to keep a food diary
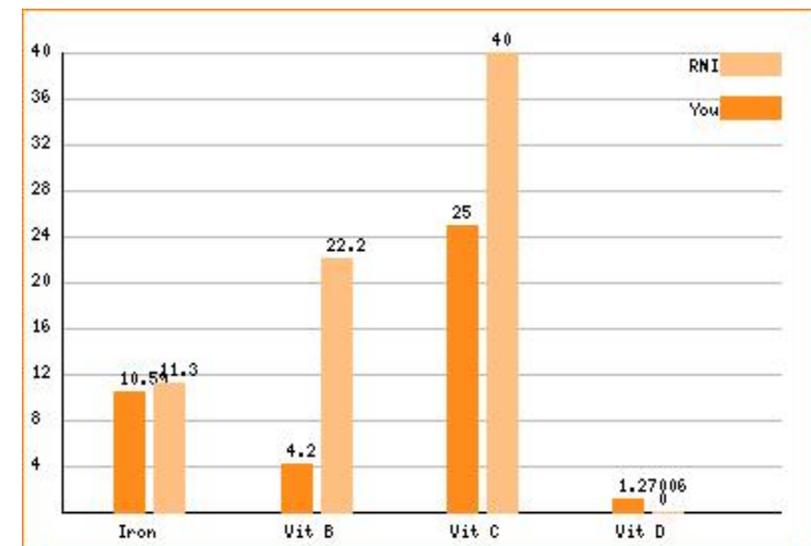
Inquiry Process (part of)

Data collection

- To be able to reflect on data collected by their group on food observations

Data Analysis

- Compare their nutrients intake with the RNI,
- To make valid inferences
- To recognise a healthy and less healthy diet

Nov 2008: Data Collected

- **Video** capture of the 9 lessons with three cameras (2 groups and 1 overall),
- **Interviews**
  - 11 interviews with Teacher, 7 with pupils
  - during and post-intervention
- Researchers' **observation notes** after each lesson
- 70 sets of **Questionnaires** (pre-post)
- **Log files** from 28 students coming from their use of the PI toolkit in class and the home (e.g. summaries, graphs, presentations)

Research Question re-visited:

- How does the PI toolkit scaffold and enable the PI learning approach?
- modified Critical incidents analysis (Flanagan, 1954; Carroll, 1993; Sharples, 1993)
  - Breakthroughs
  - Breakdowns
  - Routines

Themes from Critical Incidents

- **Co-ordination across contexts**
  - connect school with out-of school activities, e.g. carrying the equipment

- **Co-ordination within contexts**
  - technology-mediated activities within the school or home context, e.g. Usability of the PI toolkit

- **Revealing identity**
  - Activities need to be engaging and personally relevant but not too personally revealing

Lessons learnt: orchestration

Co-ordination across contexts

- Students forgot computers
  - They didn't have access to previous work
  - Need for centrally accessible data storage

- Lack of willingness to bring the equipment from home to school
  - Need to provide storage place at school

- Pupils not in the same inquiry phase
  - Maintain flexibility
  - Need for iteration of inquiry activities

Lesson learnt: orchestration

Co-ordination within contexts

- Pupils' support for
  - Access to a shared pool of data (group -class)
  - Activities to discuss and negotiate findings

- Teacher's dashboard to monitor pupils' activities
  - "Freeze" button to support class discussions

Lesson learnt: too personal

- Difficulties in finding the sweet spot between personal and non-personal inquiries
  - Participatory design techniques are essential
- Ownership data and results
  - Permissions for sharing own, group and class data
- Responsible for their actions
  - Aware of other pupils' actions

Thank you

Any questions?

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