Interactive Teaching and ICT

Aims
How can teachers integrate ICT tools into their everyday practices of teaching in order to improve a range of learning outcomes? Specific project objectives are:

1. To compare the learning outcomes of effective teaching in mathematics, science and languages with and without digital tools.
2. To analyse and theorise the links between designing teaching strategies and improved learning outcomes when ICT is used in classroom settings.
3. To analyse changes in teachers’ pedagogical practice as a result of designing interactive teaching strategies and engaging in reflective dialogue in relation to ICT tools for teaching and learning.
4. To develop research capacity in Wales concerning learning, teaching and professional development.

Significance
Large sums of money have been invested in ICT resources for schools, largely as an act of faith, and it is important to analyse what the impact has been on pedagogy and on standards of attainment.

The Welsh Assembly Government has particularly focused on the provision of interactive whiteboards. It is anticipated that the impact of ICT on teaching and learning in general will provide a foundation for more effective ‘whiteboard’ teaching approaches, which are designed to engage learners through rapid questioning and provide line order knowledge and skill tasks.

Programme of work
Teachers in primary and secondary schools from across south and west Wales will work as pairs to plan and teach a particular subject (Mathematics, Science, a Modern Foreign Language or Welsh as a second language) over a six-month period. One of the pair, who is experienced in the use of ICT, will teach predominantly with ICT and the other, who will be an effective teacher but less experienced in using ICT, will teach without ICT. For the second phase of the project, both teachers will use ICT. Initial data will be collected using pupil tests of concepts, process skills and metacognitive knowledge, and interviews with pupils and teachers. A sample of teachers by each teacher will be observed and discussed using video-elicited reflective dialogue. All this will be repeated at periodical intervals in the final phase in order to clarify the relative contributions of the teacher and the ICT. The classroom activity observed will be a lesson using a framework which characterises interaction in the classroom: orchestration of the setting, affordances and constraints for learning activities.

Schedule

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<thead>
<tr>
<th>2005</th>
<th>2006</th>
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<tbody>
<tr>
<td>April–June</td>
<td>Identify participating schools, teachers and classes</td>
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<td>August–September</td>
<td>Interact with teachers</td>
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<td>October–March</td>
<td>Pre-teaching and interviewing of phase 1 pupils</td>
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<td>April–August</td>
<td>Phase 1 teaching</td>
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<td>May–June</td>
<td>Field testing of pupils</td>
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<td>June</td>
<td>Analysis of observations and reflective dialogue</td>
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<td>July</td>
<td>Analysis of pupil test data</td>
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<tr>
<td>August–December</td>
<td>Reflective dialogue with teachers</td>
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<td>January–March</td>
<td>Analysis of pupil test data</td>
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Analysis of pupil test data

Analysis of observations and reflective dialogue

Analysis of pupil test data

Reflection and planning conference with participants and research users

Research team

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