New Perspectives for Learning - Briefing Paper 36

Supporting ICT-related learning Innovations in Schools

Context of the Research

Information and communication technology (ICT) has the potential to enhance the education and training sector, but recent research activity in this area has shown that the teaching community involved in these research projects have found it difficult to embrace the results in their daily practices. This project examined the results of four previous ICT-related studies and aimed to provide a guide for teachers and schools to select educational designs and technology applications/solutions that are suited to their needs and therefore increase teachers' confidence in utilising research results in their everyday practice.

The innovative use of ICT in teaching/learning is a major research area actively supported by the European Commission under initiatives like Educational Multimedia Task Force, IST Programme, SOCRATES/MINERVA and e-Learning Initiative. Taking the results of four projects undertaken within these initiatives, this project has aimed to make the link between practice, research and decision-making. The recommendations are considered to be relevant to future policy-making by the European Commission as well as individual European Union Member States.

Key Conclusions

The following key conclusions were reached: -

1. Innovative use of ICT in teaching/learning can stimulate dynamic learning environments.

2. The effectiveness of ICT based innovations, scientific knowledge and/or new educational/pedagogic models relies on their successful integration into existing educational activities.

3. A working definition of ICT-related teaching/learning should focus on the activities of innovators who are integrating into existing activities or new activities, resulting in profound changes, reforms or improvements in teaching learning processes and outcomes. This includes existing or new: -

- ICT-based teaching/learning products
- ICT-related educational/pedagogic theories and scientific research outcomes.
- ICT-related institutional/organisational strategies and plans.

4. Teachers are the central figures for the cognitive, emotional and social development of their pupils in ICT-related teaching/learning. However, new models and the use of ICT have changed teachers roles.

5. The implementation of ICT in school teaching/learning has affected the distribution of roles/responsibilities and classroom interaction.

6. Regardless of their differing learning patrimonies and characteristics, schools still produce ICT teaching/learning innovations.

7. There are two main approaches for the conduct of ICT teaching /learning innovations. The first uses real life experiences and practitioners innovative ideas. This can be fully integrated into the whole school's development plans. The second enables the teachers involved in the research and development to support and initiate educational innovations, which can enhance research through:-

- Contributions to the design and methodology of research projects.
- Tailoring situations for learning and research that are better suited to schools.
- Expanding the anticipated uses of ICTs in education.
- Insights into the strengths, limitations and suitability of research outputs in schools.
- Localising the research outputs.
- Disseminating results of the research to colleagues and throughout schools.

8. Many of the projects were less successful as they had no/too few teachers involved in their implementation stage and there was not whole school involvement in the design and evaluation stages. Also, teacher's language barriers' and heavy workloads affected the sharing of informal knowledge.

9. The sustainability of research and development driven innovations is threatened by:

- The nature of research knowledge and practices.
- Schools' attitudes towards research and development.
- The links between researchers and schools.
- The time spans of the projects.
- The nature of research and development products.

10. The methods of reporting research (the publication of research papers, conferences etc…) limits the dissemination of new knowledge amongst school practitioners, as these methods are not considered important sources for teachers' professional development.

11. The acceptance of ICT-related teaching/learning innovations relies on regular access for teachers and pupils to up-to-date networked ICT.

Key Recommendations

The following recommendations were made:

1. Attention needs to be given to developing a supportive framework for ICT-related teaching/learning innovations.

2. The placement of ICT in school labs should also include efforts to bring ICT into regular classrooms and informal learning spaces. This will require the school to offer space that will support these flexible arrangements.

3. The number of teachers capable of using ICT applications needs to be increased.

4. There should be an acceleration in the implementation of policies that support teachers in developing relevant skills for ICT teaching/learning.

5. Emphasis must be placed on the pedagogy behind the use of ICTs for teaching/ learning.

6. Teacher training and professional development oriented policies should support ICT-related teaching models that encourage both pupils and teachers to play an active role in teaching/learning activities.

7. Policy reforms for teacher training should prioritise the adoption of new teaching/ professional development models and the development of practical ICT-related skills that related to:

- Collaboration.
- Curriculum and resources management.
- Knowledge building.
- Representation and sharing in semi-structured or open-ended ICT-based learning environments.
- Pre-service teacher training with an emphasis on teachers going into secondary education.

8. Policy should encourage long-term networks between schools and research institutions/universities as these will help support schools in becoming learning organisations. However, reform is needed of existing curricula and assessment structures.

9. Teachers need to adopt, develop and support a pedagogic culture that develops supportive practises for pupils' and encourages own theories in teaching/ learning activities. It should be linked to the development of life-long learning and professional practices that enable teachers to keep in touch with ICT developments, new knowledge and research on teaching/learning. Further scientific research is needed into this area.

Further Information

Full title of the project - "Synergy between Practitioners' needs and opportunities, research orientations and decision making on the usage of ICT in primary and secondary education" with the final report completed in December 2002.

Full report, Partner details website

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