

OECD/CERI ICT PROGRAMME

A Case Study of ICT and School Improvement

Austria

Summary

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Hypotheses

The following section summarizes the most important results obtained through the analysis of the case studies.

Hypothesis 1

Technology is a strong catalyst for educational reform, especially when the World Wide Web is involved. The rival hypothesis is that where true reform is found, technology serves only as an additional resource and not as a catalyst, and that the forces that drove the reform also drove the application of technology to specific educational problems.

The ICT implementation has changed things in the schools investigated, but no great educational reform has taken place in Austria. At present, it is possible to identify three positive results brought about by the ICT emphasis in the selected schools:

1. an increase in student enrollment
2. more students with high abilities attend the ICT emphasis
3. increased reflection on some processes, e.g. teaching, organizing of schedules, etc.

The great educational reform, however, failed to address basic conditions (legislative and administrative).

Hypothesis 2

The diffusion of the reform (and therefore of ICT) followed the traditional diffusion pattern for reforms and innovations as outlined by Rogers (1995). The rival hypothesis is that technology functions differently from traditional innovations and reforms and that different diffusion patterns therefore occur.

The ICT implementation was always started by a small team of teachers who were interested in ICT. The ICT emphasis spread throughout the school (Kinkplatz) but often involved only a minority of teachers. This development depends on three factors:

- the working atmosphere in general

- the demographic composition of the teaching staff (e.g. age, gender) and
- the readiness of teachers to try something new

Hypothesis 3

Successful implementation of ICT depends mostly upon the technological infrastructure and student ICT competence rather than upon staff competence in the integration of ICT into instruction. The rival hypothesis is that teachers mediate such applications when they are successful, and that their academic value relates positively to teacher competence.

In the long term, it is important that the technological infrastructure really work; otherwise the teachers and IT specialists involved will be frustrated, and no meaningful planning is possible (e.g. planning of lessons, hardware and software updates, manpower planning, etc.). Furthermore, it is important for at least a couple of members of the teaching staff to be extraordinarily engaged and have very good ICT skills so they can support their colleagues. In fact, the rival hypothesis more accurately shows the status of ICT implementation. The more familiar and comfortable teachers are with using ICT, the more they will use it for their teaching preparation and for their actual teaching.

Hypothesis 4

Gaps in performance between high and low income students will be enlarged rather than diminished where all students have equal access to ICT. The rival hypothesis is that equal access to ICT will lead to high poverty students closing the gap with low poverty students.

The problem, according to a majority of teachers, is that ICT widens the gap between students who have a PC and Internet access at home and those who don't. Students with a computer at home have better skills as a result of more practice. It would be a great challenge for the schools to introduce measures to close this gap.

Hypothesis 5

Successful implementation of ICT will lead to the same or higher academic standards in spite of the low quality of many ICT materials. Academic standards are a function of teacher and school expectations and not of the standards of textbooks, ICT materials, and the like. The alternative hypothesis is that ICT use will lead to a lowering of academic standards as students spend more time on marginally beneficial searches and in browsing poor quality Web and

courseware content.

This hypothesis is answered indirectly, because the interviews didn't contain the necessary data. The analysis of the data collected indicates that ICT does not lead to higher or lower academic standards but that it does improve the form and appearance of work students and teachers present.