

# Knowledge Link >>>

## DMI/ELS – ETSB LAPTOP RESEARCH PROJECT

**Overview:** *The Centre for the Study of Learning and Performance (CSLP) evaluated the third year of the Dennis McCullough Initiative/Enhanced Learning Strategy (DMI/ELS). The DMI/ELS involves the distribution of laptop computers starting with Cycle 2 teachers and students in the Eastern Township School Board (ETSB).*

### Objectives

The project studied: CAT-3 test scores of Grade 3 students both before and after being exposed to DMI/ELS, teacher technology use as reported by the teachers themselves on a questionnaire (the TIQ), and the body of literature of technology in education and laptop classrooms, to answer these questions:

- ▶ Did Grade 3 students perform any differently on the CAT-3 test after their first year in DMI/ELS?
- ▶ To what extent and in what ways were Grade 3 teachers using technology in their classrooms, if at all?
- ▶ Could changes in achievement results be linked to technology usage and if so, how?
- ▶ What does the literature have to say about the potential of and best practices for technology integration in laptop classrooms?

### Literature Review

The CSLP reviewed the literature on the potential impact of technology on learning in general and its impact in one-to-one laptop initiatives in specific. We found that:

- ▶ It is unrealistic to expect that one-to-one laptop initiatives will automatically lead to increased student achievement.
- ▶ One-to-one computing works best when combined with careful planning, change management strategies, and professional development opportunities.

### Main Findings

- ▶ There were expected improvements in achievement on the CAT-3 achievement test from Grade 2 to Grade 3.
- ▶ Gains in CAT-3 scores by ETSB Grade 3 students matched national averages.
- ▶ If anything, ETSB Grade 3 students had closed the achievement gap over the year except in reading.
- ▶ Achievement gains cannot be readily linked to technology use given teachers' responses to the technology implementation questionnaire (TIQ).
- ▶ The literature is mixed on the question of whether and how technology can help children learn.
- ▶ The literature is consistent in warning that technology by itself will not produce learning gains.



## The Evidence

### Achievement

We compared students' CAT-3 scores from before they were in the DMI/ELS (that is, when they were in Grade 2), with their scores after a year in DMI/ELS (Grade 3 CAT-3 scores). We found achievement gains in Language, Math, and Reading scores. Gains in Language and Math were on par with national gains, but in Reading were lower than national averages.

### Technology Use

Grade 3 teachers reported details of their technology use on the Technology Implementation Questionnaire (TIQ). We compared technology use responses to CAT-3 scores to determine whether there were any clear relationships between technology use and student achievement. No relationships were found between technology use and Math or Language scores. The only relationship that was found was that the more technology was used, especially for administrative and traditional purposes, the lower the students scores in reading.

The TIQ also contained two open-ended questions in which teachers called for an increased amount of professional development, especially training focusing on more innovative pedagogical uses of technology.



### Implications for Practice

- ▶ Change management will contribute to the success of DMI/ELS.
- ▶ Pedagogically sound uses of technology need to be identified and championed.
- ▶ Increased professional development opportunities for DMI/ELS teachers focusing on effective ways to integrate technology should be planned.

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### What still needs to be done

We must continue to study the literature on technology implementations in education and reports of other one-to-one implementations to learn best practices for this type of technology initiative.

The CSLP is dedicated to collecting and disseminating evidence in education to inform and improve Canadian policy making and practice. To learn more about the CSLP, visit

<http://doe.concordia.ca/cslp> or call (514) 848-2424 ex. 2020.