# Our Latest Tool – Emergent Literacy in Mathematics

Soon to Be Available in the Learning Toolkit!

Currently, the LTK assists students in developing foundational skills for reading, writing, inquiry, and self-regulatory learning strategies. But to this point, the LTK has been missing an important pillar of early childhood learning: the development of numeracy skills.

The CSLP is pleased to announce that in partnership with LEARN, the English Montreal School Board, and two French school boards, (CSRN and CSDM), work has begun on the development of an evidence-based bilingual tool. *Emergent Literacy In Mathematics (ELM)/Orienter la réussite des mathématiques émergentes* (ORME) will be designed to develop foundational competencies in mathematics using engaging, interactive multimedia.
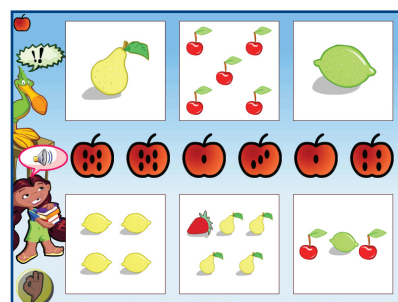
A prototype of the ELM/ORME software was made available for pilot testing in January. Major funding from MDEIE has been awarded for the development of the full-scale version.

Using ABRA & ePEARL: Improving Reading Comprehension

Over the years, the CSLP has conducted studies to explore the impact of LTK tools on students' self-regulation and literacy skills., Recently, CSLP researchers investigated whether the combined use of ABRA and ePEARL (level 1) had a positive impact on the comprehension skills of cycle-one (grades one and two) students. In experimental classrooms, teachers used both tools during the school year, while in control classrooms, teachers used neither tool. English Language Arts, Literacy and RECIT school board consultants in our partner school boards in Quebec played the primary role of supporting teachers in their use of ABRA and ePEARL. CSLP staff helped consultants meet the needs of teachers as well as prepare and distribute printable and multi-media support materials.

Last year, over seven hundred students from forty grade one and grade two classrooms from seven English school boards in Quebec participated in this study. In classrooms where both ABRA and ePEARL were strongly implemented students' reading comprehension scores improved by 8.7 percentile points… very encouraging findings.

To validate and extend these results, CSLP researchers continue to evaluate the effect of the combined use of ABRA and ePEARL on the reading performance and self-regulation of cycle-one students. In the latest research, we are working with high implementing, experienced LTK teachers to see whether and how the effects of the tools are enhanced.

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ABRACADABRA

French Adaptation

Members of the CSLP have been working with the French language arts team at UQAM on the development of a French adaptation of ABRACADARBRA. Under the leadership of Drs. Abrami and Brodeur and with funding from MELS, MDEIE, CSDM, CSMV and CSRN, this multi-year project will see the adaptation of the ABRA Instructional module with numerous activities, varied difficulty levels, and several linked digital stories. Further funding is being solicited for the adaptation of the Teacher, Parent and Assessment modules. Stay tuned for the release of the Instructional module in 2013.
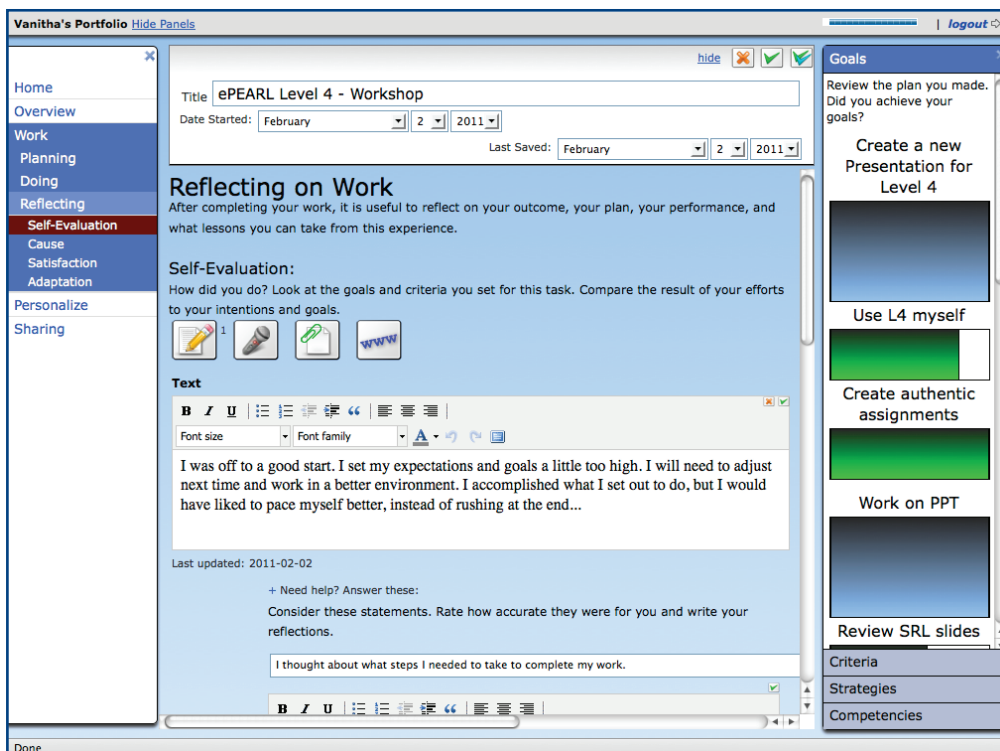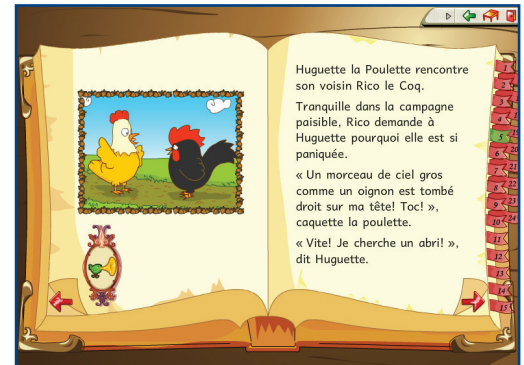
LTK Training Institutes

For the past four years, funding from the Max Bell Foundation has enabled the CSLP and LEARN to invite consultants and lead teachers to Train the Trainer Institutes across the country. Each day of the institute focused on a specific tool (ABRACADABRA, ePEARL and ISIS-21), and was divided into teacher presentations, an overview of the theoretical framework underlying the tool, and hands-on activities. The Learning Toolkit Teacher's Manual and on-line training materials are available to interested educators on the LTK wiki at https://cslp-epearl.wikispaces.com.

ePEARL

The existing levels of ePEARL (1-3) are age-appropriate for students from early elementary school through secondary school. The new level 4, developed with funding from MELS, has been specifically designed for pre-service and in-service teachers, as well as older secondary and post-secondary students.

In the winter term of 2011 we piloted this new level of ePEARL with CEGEP and university education students. In their reports about their ePEARL level 4 experiences, students emphasized the tool's capacity to structure and organize their work in a reflective way. The participants also valued ePEARL as it allowed them to keep track of, and reflect on, their professional growth. Eighty-four percent of pre-service teachers reported that ePEARL helped them work on important professional competencies. At the same time, the responses indicate that training and support are critical for the successful use of level 4.

In this project we learned that a number of steps should be taken to broaden the audience of successful users. In the first place, it is important for students to better understand meta-cognitive and motivational self-regulation processes. Second, for ePEARL to fulfill its promise as a professional development tool, it needs further refinement including simplified navigation as well as customizability for individual learners. Finally, support and help, including tutorials and instructional videos, are crucial for the tool's autonomous use.

ePEARL Upgrades!

ISIS-21

Last year, an interactive game was incorporated into ISIS-21 to help students learn more about the steps in the inquiry process. With the addition of the game, ISIS-21 was extensively piloted during the winter term of 2011. Several LBPSB and EMSB teachers and their cycle two and cycle three (grades five and six) students used ISIS-21 to complete their term-long projects in Ecology and History.

The majority of students reported having a positive experience with ISIS-21. Because ISIS-21 is linked to ePEARL, there was increased student engagement in the self-regulation process of goal setting, choosing strategies and reflecting. Students' responses also showed that they learned a number of strategies vital for successful inquiry including formulating specific research questions, finding background information, selecting keywords, building a search statement, and evaluating online sources.

Student-centered videos are currently being produced (funded by MELS) to further support each step of the inquiry process. This winter, CSLP researchers have been examining the effect of ISIS-21 in such areas as information literacy, critical thinking and self-regulation with funding from SSHRC. New funding from the Max Bell Foundation will allow further development of an expanded tool and a much needed Teacher module.

Learning Toolkit

To learn more about the tools in the Learning Toolkit go to http://doe.concordia.ca/cslp/LTK