



Learning Toolkit



Last August the CSLP announced the release of the **Learning Toolkit+** with the following new additions and revisions:

- **Redesign** of the LTK+ Login and Lobby pages (French and English).
- Level 1 and 2 users: Launch of the **French adaptation of ABRACADABRA**; launch of ELM (Emerging Literacy in Mathematics) software in French and English; and additions to READS, our Repository of E-Books and Digital Stories.
- Level 2 users only: **Revisions to ISIS-21** including the addition of a Flexible mode; some new features in Guided mode, and the launch of the French version.

The LTK+ has received lots of rave reviews! Please send us an email to ltkdemo@education.concordia.ca if you wish to receive future upgrade notices.

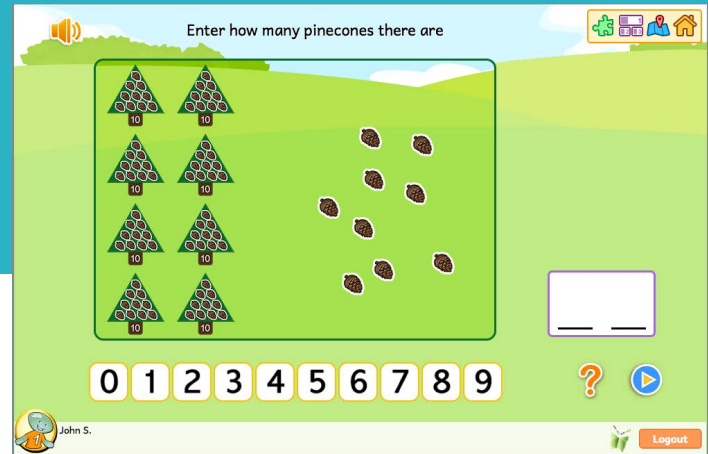
Emerging Literacy in Mathematics

Due to our partnership with the **Max Bell Foundation**, we continue to work on the Student module and there will be five new **Place Value** activities in the release this summer. We have also started to conceptualize the next theme, **Geometry**, which will develop students' ability to identify circles, squares, rhombi, rectangles, and triangles. We have continued to make some interface improvements to the existing activities.

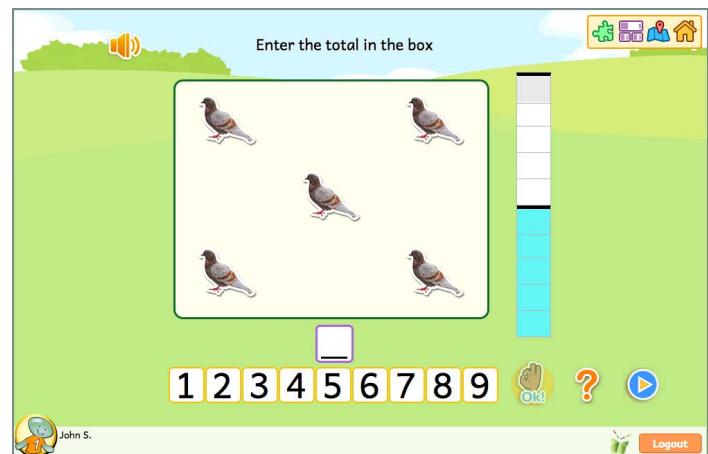
Research

As this newsletter is being prepared, a year-long, bilingual study on the effectiveness of ELM / ORME is being implemented. The purpose of this study is to follow up on the promising results obtained in the 2014 pilot, indeed our first effort at validating the tool.

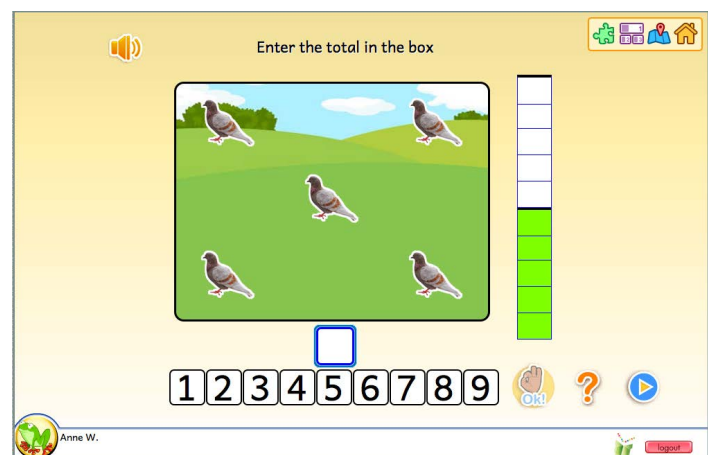
In the 2015-2016 school year, more than 250 grade one students and their 12 teachers from three school boards in Quebec (English Montreal School Board, Commission scolaire de la Pointe-de-l'île, Commission scolaire de la Beauce-Etchemin) have been participating in this study. For almost two terms, six experimental teachers taught the pivotal notions in Number Concept and its related operations with the help of ELM, while control teachers relied on their usual approach to teach the math curriculum.



Place Value activities



New Layout



Old Layout

So far, rounds of observations completed in the ELM classrooms suggest that teachers developed ease in using ELM as part of their Math instruction. They integrated the tool in a variety of classroom settings (be it a computer lab or a technology station) and teaching approaches (be it exerting strict pedagogical control over activities or giving students liberty of choice). Although the observations we took suggest that the control teachers had stronger pedagogical skill, the experimental teachers demonstrated noticeable gains in regard to various aspects of Math instruction such as: grouping students, providing feedback, reinforcing math concepts, checking student understanding during instruction, encouraging student dialogue and discussions to consolidate learning. Can these teacher method improvements be attributed to the use of ELM and adoption of the ELM philosophy? This is the question that needs further research and we will pursue our quest to answer it.

Teacher Resources:

<http://grover.concordia.ca/resources/elm/teacher/en/>

Parent Resources:

<http://grover.concordia.ca/resources/elm/parent/en/>

Promotional website:

<http://www.concordia.ca/research/learning-performance/tools/learning-toolkit/elm.html>



Teacher module

We are working to expand our teacher resources and will soon release a series of five videos that explain the approach we have taken with ELM. Over the next six months, further enhancements and additions will be made to this module.

The students have also become fluent with ELM. Observations show they need very little direction and are able to support each other. Although, as the year progressed, ELM activities became rather easy for students to complete, it continued to be used by weaker students who remained enthusiastic about the ELM activities as they experienced success with them. When student post-tests are collected in the end of the school year, we will be able to say more about the impact ELM may have on students' gains in math achievement and their emotions towards mathematics.

ELM is being piloted in Mombasa, Kenya!

A dedicated group of grade 1 teachers in our ABRA research schools have provided training in using ELM to teachers in Africa. We are eager to support our African participants and use their feedback to help improve the tool.



French ABRA

Le lancement de la version en français d'ABRACADABRA a été réalisé le 8 septembre 2015.



https://www.youtube.com/watch?v=DIIlDaqUr_DY

Plusieurs personnes y ont assisté, des représentants de l'UQAM et de l'Université Concordia, des membres de l'équipe de recherche et de l'équipe de la programmation, ainsi que des représentants des différents partenaires du milieu de l'éducation.

Une nouvelle activité **Le hockey des mots**

Par ailleurs, en 2015-2016, l'équipe de chercheurs de l'UQAM et l'équipe de programmation de l'Université Concordia ont continué à travailler à l'élaboration d'une nouvelle activité, *Le hockey des mots*.

Cette activité vise le développement de la conscience morphologique.

La conscience morphologique est la capacité à réfléchir et à manipuler les plus petites unités de la langue que sont les morphèmes. Par exemple, dans le mot « fourchette », il y a 2 morphèmes : « fourch(e) », qui est le mot de base, et le suffixe « ette », qui signifie « petit ».

La conscience morphologique est associée à la réussite de l'apprentissage de la lecture, de l'écriture (orthographe des mots) et du vocabulaire. Dans l'activité *Le hockey des mots*, l'élève doit trouver, parmi plusieurs choix, les 3 mots de la même famille que le mot inscrit sur une affiche. Comme c'est le cas pour les autres activités proposées dans ABRACADABRA, cette activité comporte des niveaux de difficulté qui permettent de tenir compte du niveau d'apprentissage de chaque élève.



Le hockey des mots

Une nouvelle version du pistage des progrès

Au cours de l'année 2015-2016, l'équipe d'ABRACADABRA s'est également investie dans l'élaboration d'une nouvelle version du pistage des progrès. De nombreuses rencontres entre l'équipe de chercheurs et celle de la programmation ont permis d'envisager les ajustements qui seraient à faire afin de permettre éventuellement à l'enseignant d'obtenir, de la façon la plus simple et compréhensible possible, un portrait des progrès de sa classe, voire de certains de ses élèves.

La nouvelle version du pistage des progrès devrait être intégrée à la ressource ABRACADABRA pour l'automne 2017. L'étude d'impact de la version en français d'ABRACADABRA est prévue pour l'année scolaire 2017-2018. Cette étude sera précédée d'une étude pilote au printemps 2017. Ces deux études seront réalisées en collaboration avec les commissions scolaires francophones partenaires d'ABRACADABRA.

Professional Development

This year a committee was formed to work on developing a number of pedagogical resources for French ABRA. This committee is comprised of pedagogical consultants from partner boards, various members of educational and community organizations, as well as a team from UQAM and the CSLP. These resource materials will include a full training day offered primarily to consultants and teachers, and will provide information regarding the tool's development and objectives as well as the importance of evidence-based practice.

Training is viewed as a crucial part of good implementation and confident use of the tool.

To ensure conformity and consistency in application, a training plan will be put into place to promote best research results! Other materials will also be developed to help inform parents of the goals of the tool and how to support their child when using it.

Stratégies d'enquête pour la société de l'information du 21^e siècle (SESI-21)

This past year we have devoted our efforts to the preparation of support materials for SESI-21, the French version of ISIS-21.



A Francophone librarian has worked with our team to adapt all of the English lesson plans and to create new units in French.

New lesson plans in French will be posted soon to our French Teacher Resources page:

<http://grover.concordia.ca/resources/isis21/teacher/fr/>

This past year we had planned to study the impact of using ISIS-21 on the development of information literacy and critical thinking skills. Despite some interest expressed by the teachers, the extent of their engagement in the use of ISIS-21 that the project required was not possible because of the rotating strikes and work-to-rule campaigns that lasted until the beginning of December. Consequently we have deferred the research project to 2016-2017. In the meanwhile the team has been preparing a couple of papers summarizing what we have learned in previous years from the use of ISIS-21 in late elementary classrooms.

We continue to believe in the importance of developing sound information literacy skills at an early age given such foundational skills will be utilized in all facets of life—academically, personally, and ultimately professionally. Many thanks to the **Max Bell Foundation** for their generous contribution to the ISIS-21/SESI-21 project, thereby helping to increase the number of information literate Canadian citizens.



This year, the CSLP has applied for funding to create a new e-portfolio for adult learners, drawing on the research and classroom experiences with ePEARL Level 4. L4 is a prototype developed several years ago and used in pilot studies at Dawson College, Bishop's, and Concordia. The CSLP, along with the Office of Academic Development at Dawson and the Centre for Teaching and Learning at Concordia, is seeking funding through the Entente Canada-Québec, a program to support English-language (minority) post-secondary education in the province.

If funded, the project would allow the CSLP to re-vision ePEARL, creating a new tool that will

scaffold self-regulation in post-secondary students through a flexible, engaging, multimedia process portfolio. The CSLP would work closely with faculty at the partner institutions to develop a tool that can be integrated into teaching and learning, whether the subject matter be teaching English as a second language, psychology, or engineering.

The original ePEARL L4 has been used in with both CEGEP and University students.

The development team will draw on research results from surveys and interviews to design an e-portfolio tool that engages young adult in deep, meaningful learning.

ePEARL Level 4

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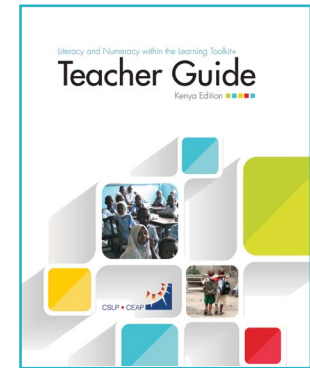
READS

Our repository of electronic stories, will experience a makeover this year! The new version, due out soon, will include a cleaner interface and an easier searching/sorting feature as well as more books of course. The new search/sort feature will allow users to see how many books are under a specific category and make it easier to retrieve desired items.

READS currently includes 640 books in 60 different languages, including Kiswahili, Mandarin and Italian. With translations, there are 1,186 titles.

International Projects

Kenya



We are very pleased that we have been able to continue our project in Kenya due to financial support from the **Strengthening Education Systems East Africa (SESEA)** project, a sub-component of a large multi-million dollar joint initiative between Canada's *Global Affairs* and the *Aga Khan Foundation*. The literacy project that originally started as a pilot in 2012 is now a highly successful intervention involving the integration of ABRACADABRA in 31 classrooms and involving about 1400 grade 3 students from the Mombasa and Nairobi areas.

This year the focus of our research is on uses of a variety of Learning ToolKit+ (LTK+) tools, such that use of ABRACADABRA is being complemented with the use of READS (Repository for E-Books and Digital Stories), consisting of over 640 multilingual catalogued digital stories. In addition, the use of ELM (Emerging Literacy in Mathematics) in three Math classes is unfolding as a small feasibility pilot for math instruction in the Kenyan context.

Similar to previous years, we are using standardized tests to measure changes in students' literacy and math skills. Changes in the pedagogical practice of Kenyan teachers as a consequence of using ABRA with READS and ELM are also the focus of this research. As well, we hope to learn more about the factors that are needed to scale and sustain the use of these LTK+ tools in the Kenyan context.

Teacher Guide

Kenyan teachers now have access to an illustrated guide to help them integrate ABRA, ELM, and READS, into their classrooms. The book, *Literacy and Numeracy within the Learning Toolkit+: Teacher Guide [Kenya Edition]*, provides over 200 pages of information on using the toolkit. It includes teacher aids, lesson plans, and worksheets, as well as a section on incorporating cooperative learning activities into teaching and learning practices. Illustrated with photos of Kenyan children, the book offers teachers a comprehensive, easily-accessible guide for all aspects of the LTK+ from setting up the tool to using the programs with children of diverse needs. The Kenya Guide is available as a free, downloadable PDF at:

International Hong Kong Projects



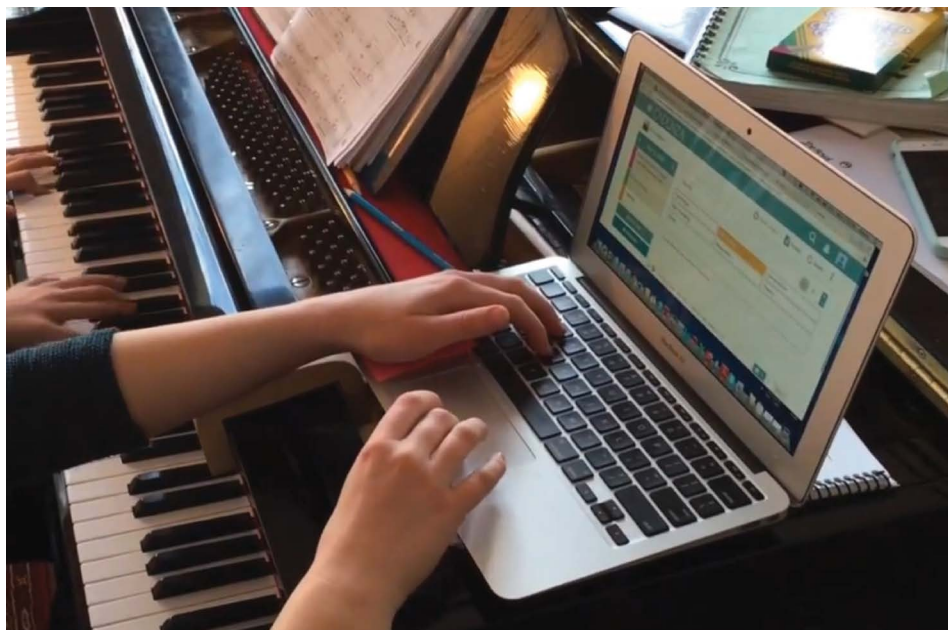
Photo credit: freepik.com

During the two school years 2013-2014 and 2014-2015, researchers from the **Center for Enhancing English Learning and Teaching (CEELT)** at the Chinese University of Hong Kong led a project to learn how ABRACADABRA can be used to increase the English literacy of students in Hong Kong. The project targeted 382 early elementary students from low-income working class families: 228 students from the experimental classes were using ABRA as part of their English Language curriculum whereas their 154 peers in the control classes were taught English literacy in the regular way. After 4 weeks (year 1) and 22 weeks (year 2) of using ABRA in the computer labs and on tablets, the experimental students' gains on the standardized tests of phonemic awareness and phonics were significantly higher than that of their peers in the control classes.

Classroom observations and teacher interviews were supportive of using ABRA in a second-language classroom environment. The teachers enjoyed the use of ABRA in their classrooms and students liked the game-like features of ABRA and were engaged in the activities. The ABRA teachers reported important benefits that use of ABRA had on their professional skills such as integrating ICT into teaching and learning, using diversified, student-centered learning and teaching activities, employing new teaching strategies, and using assessment reports to adjust their teaching and learning activities.

Expansion to China!

Led by our colleagues from the CEELT, funding has been received from the Canadian International Development Research Centre that will enable us to look at the effects of using ABRA with primary students in rural China. Approximately 700-1000 third grade students from eight schools in Hunan will participate in a year-long pilot study.



The CSLP, in collaboration with Queen's University and The Royal Conservatory, has launched two tools, Notemaker and Cadenza, for music students and their teachers.

<http://www.musictoolsuite.ca/>

Notemaker, the Centre's first app, allows users to make recordings, share them, and then add annotations anywhere in the work. Notemaker, which can be used in other areas such as dance, sports, and even presentations, became available on the Apple Store in early December 2015.

Teachers and students also now have access to **Cadenza**, a web-based, digital notebook for planning and tracking practice sessions—and more. Students can easily access their practice plans, set goals, upload recordings for

review by the teacher, and reflect on their practice. Teachers can create comprehensive lesson plans and check on student practice logs during the week. Cadenza is available on the website of The Royal Conservatory.



Recent Publications

Abrami, P. C., Wade, A., Lysenko, L. V., Marsh, J., & Gioko, A. (2014). Using educational technology to develop early literacy skills in Sub-Saharan Africa. *Education and Information Technologies*, Advance online publication. <http://dx.doi.org/10.1007/s10639-014-9362-4>

Cheung, A., Mak, B., Abrami, P., Wade, A., & Lysenko, L. (2016, in press). The effectiveness of ABRA on primary school students in Hong Kong. *Journal of Interactive Learning Research*

Lysenko, L., Rosenfield, S., Dedic, H., Savard, A., Idan, E., Abrami, P.C., Wade, C. A., & Naffi, N. (2016). Using interactive software to teach foundational mathematical skills. *Journal of Information Technology Education: Innovations in Practice*. 15, 19-34.

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