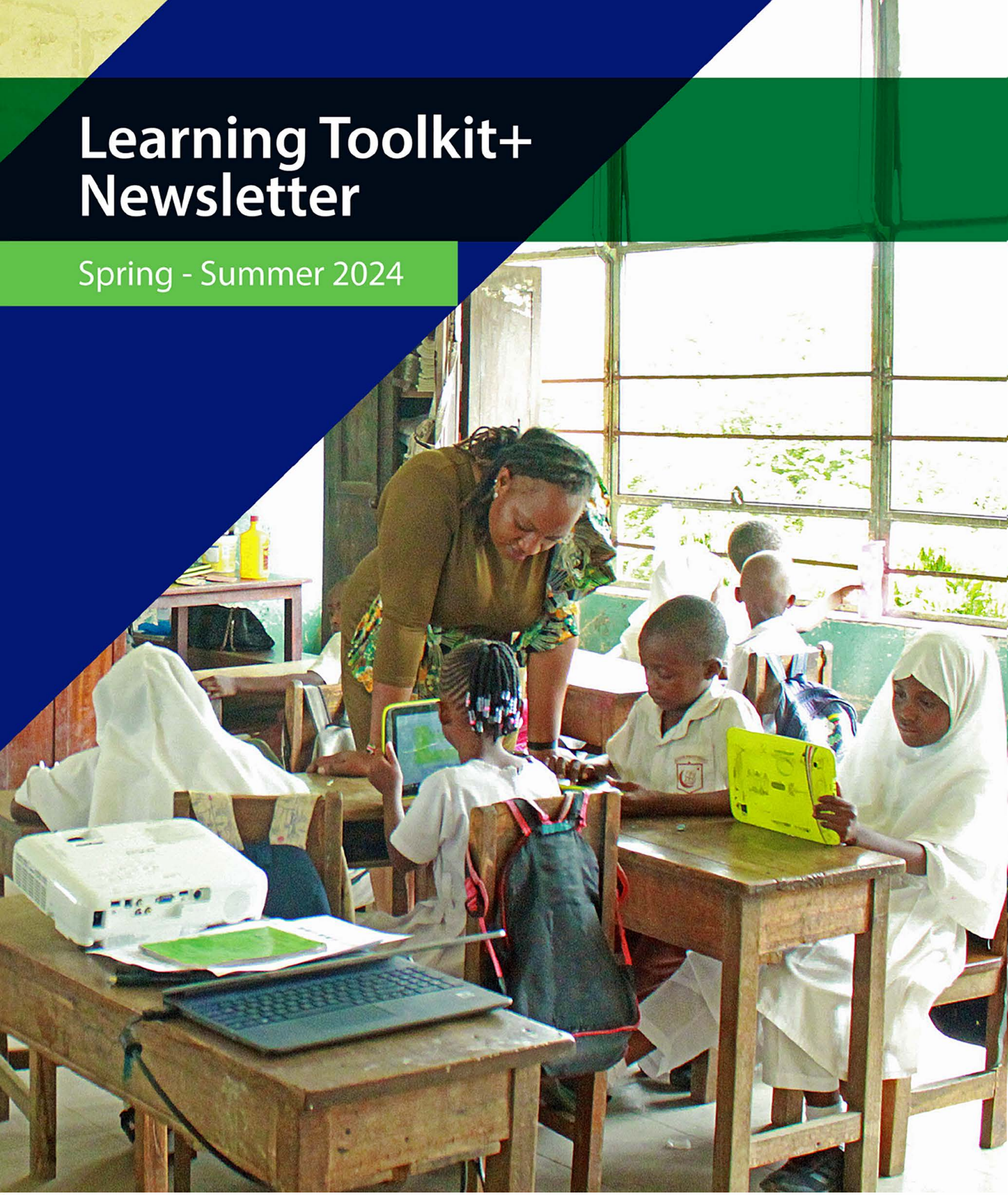
Learning Toolkit+ Newsletter

Spring - Summer 2024



Université Concordia University

CENTRE FOR THE STUDY OF LEARNING AND PERFORMANCE

Contents

LTK+ Updates 4

Celebrating 20+ Years of Improving Teaching and Learning with the Learning Toolkit+ 5

Teachers as Agents of Change 6

International Projects 8

Scaling an Educational Innovation

ELM in Kenya

Reflecting on our KIX Initiatives (2023)

Knowledge Exchange 14

KIX Executive and LTK+ Team Sensemaking Meeting: August 2023

Trips to the Field by LTK+ Team Members

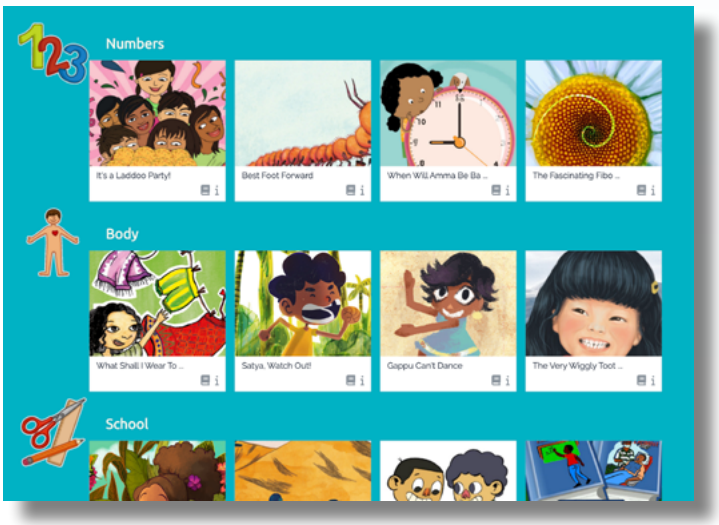
Recent Publications

LTK+ Updates

In December 2023, the team released the latest version of the LTK+ suite of educational tools on the **Download** site. This latest version contains the following new additions and revisions:

- **Added support for PHP 8.2 and MySQL 8.0.**
- **User interface and functionality updates in ePEARL (all levels).**
- **Updated documents and user interface improvements in IS-21.**
- **Revisions to several activities in ABRA and ELM.**
- **New books and stories in READS.**
- **Miscellaneous overall improvements to the LTK+.**

Since the update, a patch was added in April that included embedding the ELM activity demonstration videos within the software so there is no longer the need for Internet connectivity. LTK+ minimal requirements are now PHP ver. 7.3.0 and the MySQL ver. 5.6.



Screen captures from ABRA and READS

Celebrating 20+ Years of Improving Teaching and Learning with the Learning Toolkit+

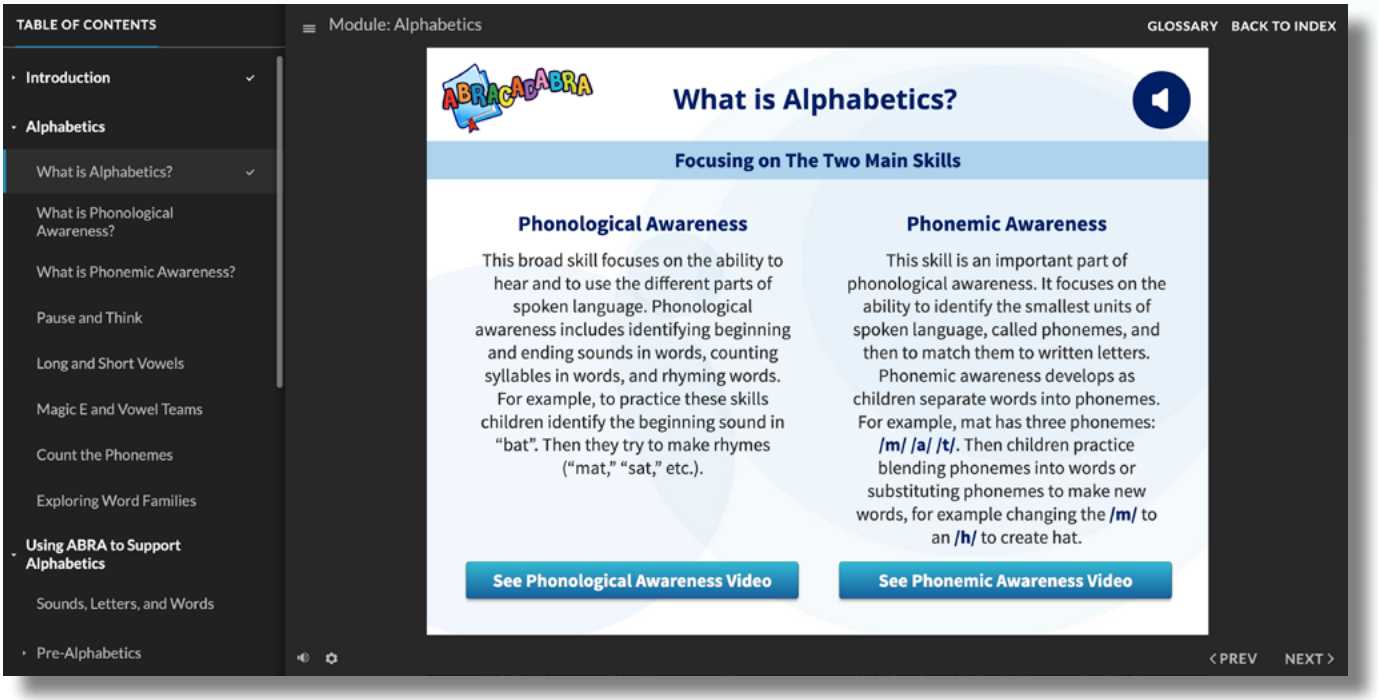
On August 31, 2023, Concordia senior administrators, past and present members of the LTK+ team (researchers, subject matter experts, instructional designers, developers, coordinators, support staff), and partners from far and wide (Bangladesh, Canada, Kenya, Rwanda, UK) came together to celebrate over two decades of research and development that has impacted thousands of teachers and learners. It was also an opportunity to recognize the leadership that has been provided by **Philip Abrami** (Co-founder, CSLP and LTK+ Lead) over all these years. A series of speeches, including one by **Bette Chambers** (another co-founder of the CSLP), was complimented by two photographic presentations with each providing a historical reflection of (1) the staff who have contributed to the success of the LTK+ tools, and (2) the teachers who have courageously taken on use of an educational innovation, even in very difficult contexts such as having one device in a classroom with over 100 students. **Read more** about this event.

Faculty, staff and international partners celebrate over 20 years of LTK+ research

Teachers as Agents of Change

Designed by the LTK+ team (see under **Who We Are**), a series of teacher professional development (TPD) online modules entitled **Teaching Early Literacy with the Learning Toolkit+** are available to the education community. They have been developed to improve teachers' understanding of the evidence-based strategies that teach the fundamental reading and writing concepts, coupled with the integration of the LTK+ literacy tools. The interactive modules were designed with multimedia, so teachers may access both text-based and video support to learn these main concepts. Each module also encourages teachers to practice and reflect on what they are learning through knowledge checks, reflection prompts, and suggested activities with colleagues.

Under a grant funded by **KIX-GPE**, the LTK+ TPD team with collaborators from **Aga Khan Schools** (Mombasa, Dhaka), **World Vision** (Kenya, Rwanda) and **Wilfrid Laurier University** developed a multi-week structured program around these online modules to provide robust teacher professional development (TPD) support. Throughout 2021-23, this blended program was implemented, refined, and researched with teachers across Kenya, Rwanda, and Bangladesh. With the online literacy modules serving as the core element, additional features such as tailored coaching, support material,



Sample screen from Alphabetics module

and assignments, were developed to ensure the teachers received context-relevant training suitable to their respective curriculum needs. Learn more about our findings under the Scaling an Educational Innovation section.

Over 800 teachers across Kenya, Rwanda and Bangladesh received certificates having completed at least one of the three modules (Alphabetics, Fluency and Comprehension) of the blended literacy TPD program. The majority of teachers completed the entire year long program, with many earning Honours designations.

Some of our Kenyan graduates

Rwandan graduates

Bangladesh graduates

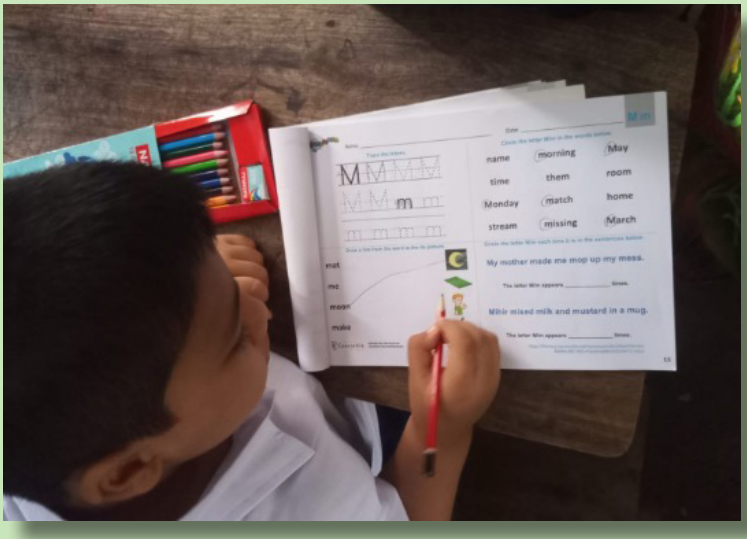
International Projects

Scaling an Educational Innovation

In October 2023, LTK+ researchers from **Concordia University** (Quebec), **Aga Khan Schools** (UK, Mombasa, Dhaka), **World Vision** (Canada, Kenya, Rwanda) and **Wilfrid Laurier University** (Ontario), completed their 42-month grant funded by IDRC under the **GPE-KIX program**. Implemented in Kenya, Rwanda, and Bangladesh, eight studies were conducted, including four TPD pilot studies in Rwanda, Kenya, and Bangladesh, two student validation studies in Kenya and Rwanda, a teacher study of TPD implementation in Bangladesh, and a sustainability survey of stakeholders and teachers in Kenya. Some of these research findings may be read in the current and previous issues of the *LTK+ Newsletter* (**2022** and **2023**) and also in GPE-KIX blog posts, such as the program's impact on **teacher motivation** and **student learning** outcomes.

Important insights on how to scale a pedagogical, technology-based innovation were gleaned from our experiences and were translated into the following set of recommendations:

1. Understand the context and adapt: The refrain "context is the king-- no one size fits all" suggests that adaptation is the key mechanism for an innovation to survive and evolve in a given context. The context dictates how the tools and strategies should be adjusted, what new approaches should be embraced, and what new skills should be brought in for the educational innovation to affect systems change in a given setting. Even though the groundwork might be powered by local partners, learning the local/national context is critical for the team to recognize meaning in the context and come up with adequate multiple solutions to the technological, economic, etc., constraints of a system.



A student in Bangladesh is working on an ABRA worksheet

2. Optimize the model: Optimization, as an ongoing and iterative process, may improve the model's cost-effectiveness by identifying the critical components (key drivers) and conditions of implementation so that the model generates the desired effects at minimal costs. However, optimization does not always mean reducing the model as adding a missing element may drastically improve the potential of the model to scale.

3. Think communities: Scaling and sustaining efforts should not only focus on the need for government uptake, but also buy-in from grassroots stakeholders who play important roles. These include headteachers, parents, relevant community groups, and most importantly, teachers. The popular adage "it takes a village" is especially relevant to achieving systemic change, with teachers serving as the most critical change agents.

4. Reinforce teacher agency: As active agents of change, teachers are at the cornerstone of pedagogical innovation. Hence, it is important to ensure that teachers are professionals capable of developing their own practice based on what is known about effective instruction, as well as recognizing and employing their own agency to effect change. In this context, the Expectancy-Value theory remains a viable tool for optimizing the TPD model and explaining teacher motivation as the major driver of change in terms of the value of innovation, expectations of success from using it, and costs of its implementation.

5. Moderate expectations: There is often a discrepancy between researchers' expectations and the reality of the political realm. Researchers should be aware of the myriad of factors at play for policymakers and other stakeholders including competing programs, limited resources, political or educational constraints, or their personal beliefs. From this perspective, it is advantageous to work with stakeholders who are willing to be persuaded, possibly by finding one aspect that hits their sensitivity. Alternatively, a project may need to change the perception of the stakeholder, to shift them from being the most unlikely supporter to one who champions the innovation.

Kenyan teachers attend their TPD showcase

ELM in Kenya

With funding under a **SSHRC Partnership** grant, the ELM study began in the Winter 2023 across 21 grade-one classes in primary public schools in the Mombasa area and continued into 2024, transforming it into a longitudinal study. This extension provided grade-two teachers and their students with additional time to implement ELM instruction, while affording researchers a longer window to examine the teaching and learning of mathematics over another year of schooling.

In January 2024, new teachers and students joined the existing participants, resulting in a total of **34 classes** evenly divided into 17 experimental classes (**891 students**), where ELM has been integrated into math instruction, and 17 control classes (**965 students**) featuring the traditional way of teaching mathematics.

To further explore the impact of the ELM software, new points of data collection have been added into the original design. These include administering a standardized measure of mathematic skills (GMADE, *Group Mathematics Assessment and Diagnostic Evaluation*) to students in the experimental and control classes in January 2024 as a mid-test, and then again in September 2024 as a post-test. To monitor the implementation of mathematics instruction, classroom observations, teacher reports, and ELM-generated trace data are systematically collected.

Feedback gathered thus far suggests a high level of uptake and activity among both new and continuing ELM teachers. Teacher interactions feature peer support, collaborative efforts, and a growing sense of ownership over the program. In this regard, we aim to investigate whether these early signs of community of practice imply promising prospects for the CoP's future development and longevity beyond the research project.

Teacher support is in the hands of our local team of LTK+ coordinators (**Clifford Ghaa** and **Livison Chovu**) who, along with ELM school-based ambassadors conduct regular class visits and facilitate bi-weekly pedagogical workshops. The team continues to benefit from a collaboration with the ICT Authority and the support of the county government offices. Such partnerships enable us to work in the schools, release teachers for trainings and obtain in-school ICT support. We are very thankful for their support and engagement.

Upon the conclusion of this study in the Fall of 2024, the contributions of the 17 control teachers will be acknowledged in the form of professional development for numeracy, including the use of ELM. We look forward to engaging all the participants and partners in a comprehensive discussion of the research results with the hope of a sustainable and scalable future of ELM in Kenyan schools.

ELM Theme Videos

Several teachers volunteered to partake in a series of support videos to help demonstrate the more complex math themes supported in ELM.

Amina Khalid and **Hildah Katana** model how to provide a **geometry** lesson using ELM.

Irene Katuta and **Winnie Mbizi** invited us into their classrooms to demonstrate how ELM could be used to support a lesson on **patterns**.

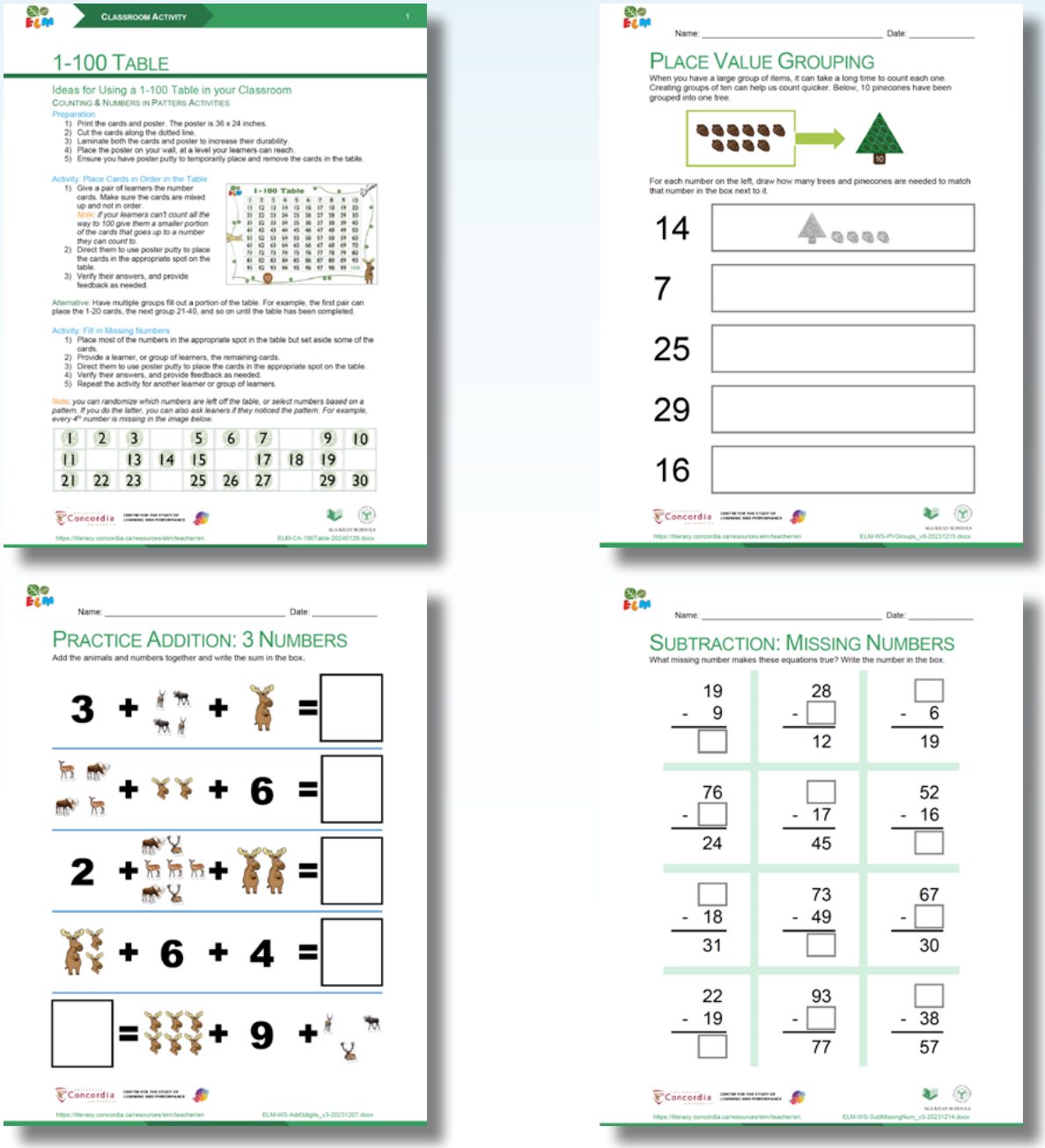
Eunice Mworeh and **Sophia Kibwana** partnered to demonstrate how a number line lesson might be taught using ELM. Filming of their planned lesson will take place during the upcoming weeks, and the final video will be added to the series of support videos soon after.

Screen captures of the What is Geometry? video

Screen captures of the What are Patterns? video

ELM Teacher Resources

To support the grade-two teachers participating in the abovementioned study, the team developed a series of offline classroom material to extend the ELM mathematical concepts. Inspired by Kenya's grade-two curriculum goals, several additional classroom activities and worksheets were created. This print-based material also came in handy when the tablets or electricity failed! The materials will be posted on the **ELM Teacher Resources** site over the summer so they may be accessible to all Math teachers.

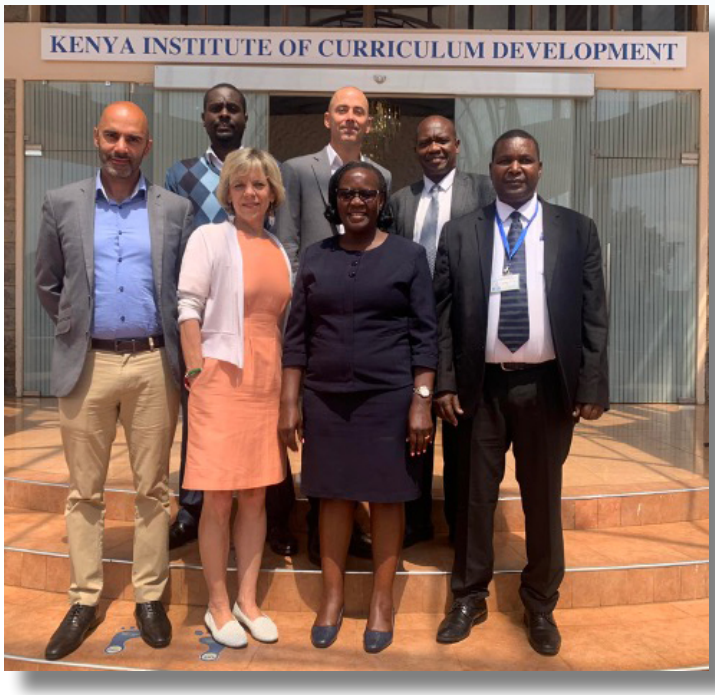


Sample ELM support resources developed during the past year

Reflecting on our KIX Initiatives (2023)

The LTK+ Mombasa dream team: Rose Iminza, Livison Chovu, Cliff Ghaa, Enos Kiforo, Maina WaGioko with Anne Wade, Rob Cassidy, Faraan Mithani

ICT Authority: Maina WaGioko, Anne Wade, Rob Cassidy, Faraan Mithani with our partners



KICD: Faraan Mithani, Anne Wade, Rob Cassidy, Maina WaGioko with our partners

Thogoto Teachers College: Faraan Mathani, Maina WaGioko, Anne Wade, Rob Cassidy, with our partners

Knowledge Exchange

KIX Executive and LTK+ Team Sensemaking Meeting: August 2023

As our 42-month GPE-KIX grant wound down, the LTK+ staff and KIX Executive held a two-day sensemaking meeting in the CSLP offices to review the research findings from each of the participating countries (Kenya, Rwanda, Bangladesh), reflect on lesson learned, and discuss next steps. Team members traveled from Copenhagen, Dhaka, Kigali, London, Mombasa, as well as BC and Ontario.

Our multi-national team assembled at Concordia University

At UNESCO's Digital Literacy Week (Sept. 4-7, 2023) held at the headquarters in Paris and with the theme Steering Technology for Education, **Anne Wade** and **Rob Cassidy** presented ***Using interactive multimedia for teacher and primary student learning in the Global South*** during a panel discussion.

Anne Wade with Philip Abrami and Jonathon Marsh

Musle (Babu) Bhuiya, Director of the PDC at Aga Khan Academy (Dhaka) and LTK+ Coordinator, presented our experiences and findings from the Bangladesh activities, at the KIX National Bangladesh Uptake Forum held in Dhaka June 11-12, 2024.

Babu Bhuiya presenting

Trips to the Field by LTK+ Team Members

Aga Khan Academy (Hyderabad): Philip Abrami with the AKAH staff

World Vision Rwanda: Rob Cassidy, Nancy Del Col, Anne Wade and the graduates

The Action Foundation: Faraan Mithani learns the process of building adaptive chairs

Recent Publications

Head, J., Lysenko, L., Wade, A., & Abrami, P.C. (2023). Scaling up a technology-based literacy innovation in Kenya: Evolution of the teacher professional development course. *International Journal of Technology in Education.* 6(4), 541-560. **https://doi.org.10.46328/ijte.541**

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Philip Abrami and the Learning Toolkit celebrated as Robert Cassidy takes the reigns (2023, Sept. 7). **https://www.concordia.ca/cunews/artsci/learning-performance/2023/09/07/philip-abrami-and-the-learning-toolkit-celebrated-as-robert-cass.html?c=/research/learning-performance/news**

AKA Dhaka welcomes back government schoolteachers for PD session (2023, August 7). **https://www.agakhanacademies.org/dhaka/aka-dhaka-welcomes-back-government-school-teachers-pd-session**

AKA Dhaka hosts government officials to observe the KIX project (2023, July 31). **https://www.agakhanacademies.org/dhaka/aka-dhaka-hosts-government-officials-observe-kix-project**

Lysenko, L. & Wade, A. (2023, July 20). *ABRA Professional development of Kenyan teachers: What their students learned.* [Blog post]. GPE KIX. **https://www.gpekix.org/blog/abra-professional-development-kenyan-teachers-what-their-students-learned**

Ooko, S. (2023, July 1). *Digital literacy project improves learning in schools.* **https://www.wvi.org/stories/kenya/digital-literacy-project-improves-learning-schools**

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Collaborative relationships to scale interactive literacy software in Kenya. (2023, April 23). [News post]. GPE KIX. **https://www.gpekix.org/news/collaborative-relationships-scale-interactive-literacy-software-kenya**

Wade, A., Abrami, P.C., & Durand, C. (2023, April 11). *Expectancy-value: How motivated Kenya teachers are transforming early literacy instruction.* [Blog post]. GPE KIX. **https://www.gpekix.org/blog/expectancy-value-how-motivated-kenya-teachers-are-transforming-early-literacy-instruction**

Gilcrist, E. (2023, March 9). *Leveraging digital education, technology, and innovation for gender equality.* [Blog post]. GPE KIX. **https://www.gpekix.org/blog/leveraging-digital-education-technology-and-innovation-gender-equality**

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Conseil de recherches en sciences humaines du Canada

Learning Toolkit
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