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Globaloria: A Conversation With Dr. Idit Harel

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People are the core component of this discussion on information infrastructure. It's easy to let the data conversation tend to topics of technology, collaboration and sector buzzwords. We need those; but, in parallel, we have to ask about the human capacity to carry out these big ideas. That said, we could argue that public schools are ground zero. With the US seeing the highest graduation rates in 10 years in its 132,000 K-12 schools (public, charter, private) there are still questions of equity, quality, methods and content. A recent study cites only 9 states with computer science as a core graduation requirement. Amazing, in a world of code. Globaloria, with its long list of awards, and founder, Idit Harel, are addressing all of those questions and more as she posits coding as "the new writing." I'll wager that the concept is bigger than what you think. Here's a summary of the conversation. [Many thanks :: Eric J. Henderson]

"What we came up with is a new way to learn – we are engaging children from a young age to solve hard problems, to think, to learn fluently with tech-tools and online resources – and to do that in a transparent, social or participatory learning environment."

Globaloria is a blended-learning platform (combining virtual and physical instruction) for learning STEM subjects, computing, game design and coding. Public school access, transparency and a constructionist, project-based approach are its distinguishing features. Students learn by conceptualizing a game or a simulation about a topic (e.g., fractions, climate change, World War II, teen-age pregnancy, poverty, bullying) by designing and prototyping it, working in teams and sharing information through a resourceful network – often generated by the work itself. Designed as a stand-alone set of courses and as integrated subject matter in existing core curricula, Globaloria teaches computational inventiveness, mathematics and design – and many more valuable, yet unmeasurable skills by today's school tests. But that's the point – teaching the unmeasurable.

A 95% course completion rate compared to the 10% rate of first-generation MOOCs (Massive Open Online Course) is indicative – not of any failure for other MOOCs, but perhaps of the intrinsic value of situating the program in schools and offering a solid teacher-training program and virtual expert-support system that are geared to the strongest method by which children learn: actually doing something.

Harel refers to this method as a deliberately constructionist mode of teaching through open-ended design problems, blending text, graphics, animation, video as well as mentoring by experts. Students learn, step-by-step how to build their own conceptual models, games and tools for representing knowledge in order to solve problems. It's a sort of MIT Media Lab for kids.

No More Black Boxes: Open Data for Everyone

"Soon, it won't make sense to deliver any type of knowledge without a networked learning management system. The old pedagogy, from the classroom to the corporation doesn't allow for innovation and invention at the speed of the problems we face."

The data angle that piqued us at Markets for Good was how the Globaloria courses are embedded in a learning management system in which real-time use and sharing of information guides the learning experience for the students , using a unique set of visualization tools in addition to tracking usability and progress for courseware/software and curriculum designers. Compare this to traditional, "private learning" in which even the student who studies well still faces a "black box" of elements that lead up to problem sets or exams and his/her

preparedness to meet the task. Imagine giving someone a car to drive, but with no dashboard indicators or even a windshield!

It turns out that the black box extends to parents and teachers as well. Globaloria makes each step of the work and progress transparent to everyone – simultaneously – and follows up with individual consultations with each school. One significant benefit here is the enabling of true scientific method: learning through peer review, replication of successful processes and iterative projects.

Finally, the full database of activity is not only open to students, teachers, principals and parents but also available to academic researchers and business partners interested in mapping patterns in online teaching and bended learning, right here.

The New Writing

"We're not teaching code simply to make coders as a vocation. When we say, 'coding is the new writing,' we mean that in every sense of how we use writing, from poetry to mathematics, from simple human communication to thought leadership."

Nearly 30 years ago, this idea was developed in the MIT Media Lab, according to Harel. In what the Lab's founders and thought leaders (Jerry Wiesner, Nicholas Negroponte, Seymour Papert, Marvin Minsky) describe as an "antidisciplinary" culture, the focus has never been on any one discipline or tool, but rather on enabling people to move within and across disciplines and adapt to the speed of change by asking big questions, creating disruptive technologies and computational simulation environments amidst the flurry.

Computational intelligence at the very beginning levels of education makes sense here. While learning the actual technique and grammar of coding is an important domain, and millions of coders are needed in our world today to build systems for business, government, health, entertainment, and education, it may be more valuable for *any* person to be literate in computational thinking and digital-media innovation as a new basic fundamental skill set.

Social Impact

"Code is everywhere, well beyond the expected domains of politics, business and social welfare. We are teaching the 'new writing' in schools because we believe it provides a wider path to prosperity. It's therefore a social responsibility to give everyone an equal access to this kind of knowledge and ensure basic fluency with these new tools among all citizens."

Globaloria courses teach kids how to build educational games, scientific simulations and instructional apps as means for immersing them in thinking about thinking. Learning how to conceptualize and build visualizations and models by working on creating a functional complex system is exciting for kids. Everyone knows how to play games, but learning to make them is hard. However, making games is a powerful hook to engage today's students in active thinking and learning.

Harel describes herself first as an education disruptor and reform activist for all her education technology inventions, emphasizing that her work is first and foremost driven by wanting to improve any nation's public schooling as a human right, a collective social responsibility, as a vehicle for social progress. As such, ensuring access for everyone is best achieved with public schools at the center of the model. That said, even children who come from well-off households and private schooling still need to master this type of learning and instruction in their communities.

Access to technology is not a solution in itself. While broadband access for everyone in absolutely urgent, without hands-on, project-based courses and integrated project-based learning management systems, it leaves us only with a tech-centric narrow mindset, not with the means to achieve long-term social impact.

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