MIT Media Lab
Future of Learning

The Learning Hub

Entry Point to Twenty First Century Learning

A Call for Action at the Local and Global level

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1. General Idea

A recent paper by Papert in collaboration with former governor of West Virginia Gaston Caperton[1] opens with this statement:

> The approach of the twenty-first century has brought a chorus of pronouncements that "the information society" both requires and makes possible new forms of education.

We totally agree with this. But we do not agree that tardiness in translating these declarations into reality can be ascribed, as it often is, to such factors as the lack of money, technology, standards or teacher training. Obviously there is need for improvement in all of those areas. But the primary lack is something very different — *a shortage of bold, coherent, inspiring yet realistic visions of what Education could be like ten and twenty years from now.*

Vision does not mean prophesy or blueprint. Nor does it mean hand-waving assertions that being connected will change everything. Vision is a mindset with two characteristics: it refuses to be bound by assumptions that what has been always will be; and it is willing to bring hard work and rigorous, tough-minded thinking to bear on elaborating alternatives.

This call for action is written for activists and thinkers who have had, or dream of having, the privilege of being able to build visions of what learning could become in a globally connected world rich in ubiquitous digital technologies. This is a privilege because the work of making realistic and rich visions requires conditions that are unfortunately rare. They include: time to think, communities of like-minded people to think with, diverse forms of knowledge to fuel the thinking, and real-world experiences to keep the thinking under control. The concept of a Learning Hub described here is directed at creating these conditions.

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[1] See websites: http://learning.media.mit.edu and http://www.papert.org

Why now? Our position is based on recognizing the present moment as a special time for such action. Taken in abstract there is nothing new about the idea that education will undergo radical change in the wake of new enabling technologies and new demanding needs. Futurists have been saying this in their vague way for many years, and researchers, including ourselves, have labored to give concrete content to the abstract promise.

What is new is that for the first time the prospect of this level of change is within the time horizon of practical education planners. We are not saying that radical changes in education can be implemented next year: for all except the richest countries the technology is not quite ready at a feasible price point and in any case there are necessary lags between planning and achieving deep change. *But for the first time a compelling case can be made for the* ***urgency*** *of developing a vision of deep change*. Failure to do so will result in costly waste of human and economic potential in a near and predictable future.

Nonetheless it would be futile to expect regional or national authorities to commit themselves overnight to far reaching policies of change. The plan presented in this paper offers a way for them to explore alternative visions and to create a culture of openness to deep change in the near future.

The crux of the plan is the creation of a network of initially very small entities we call "Learning Hubs." These "nuclei of change" could be self-contained organizations created for this purpose; they could be "departments" of larger existing organizations, or indeed take any one of many other forms. The essence is not the form but the function, which we summarize under these heads, Vision, Organization, and Networking. The two primary requirements in each participating area are to create at least one new "out of the box" pilot of an innovative learning environment and to form a local group of "learning activists" to develop, guide, research and help others appropriate successful models.

Vision

Each Learning Hub is made up of people who believe the following propositions:

- Very deep changes in the learning environment are already possible and desirable; they will become more urgently necessary with the spread of digital technology.
- Steps towards the introduction of computers in schools fall far short of the changes that must come.
- These larger changes will not come as automatic consequences of the presence of technology in schools. Serious intellectual effort is needed to define new forms of learning. Serious efforts of social consciousness-raising are needed before the public will accept the changes.

Organization

Organization is needed to give direction and form to the work mentioned in the last of the above items. The organization we propose under the name "Learning Hub" can take many different forms but a few principles are constant.

- A first principle is that theoretical work in the armchair or ivory tower is insufficient as is trying to import "ready to wear models" from elsewhere. *Each Learning Hub must take responsibility for at least one operation that models a full alternative to a significant component of traditional education*. The obvious example is to operate a school that uses modern technologies and ideas about learning to break with current practice sufficiently strongly to call well-established principles into question. Examples of specific ways in which this might be done are discussed later in this paper.

- Practical work is also insufficient. *Each Learning Hub must have the structure and the staff to act as a theoretical center as well as conducting educational work*. Again this can be done in different ways. We believe that the ideal form is to have a system of "Learning Fellows" young people of great talent and dedication who would work at a Hub full-time for a period of several years. If local conditions make this impossible other forms of involvement can be imagined. But the example of a full-time, multiple-year fellowship provides a measure of the scale of commitment we believe necessary for success.
- *Each Learning Hub should start small not only because of difficulties in obtaining resources but because we think that it is better that it grow in an organic way and to follow the biological model of splitting before it becomes too large.* A measure of what we mean by small is given by the image of the pilot school operation involving at most 100 students (perhaps as few as 25 in the first year) and the fellows program recruiting 4 for the first year.

Networking

We imagine in the not distant future a large loosely structured international network of Learning Hubs. In each region or country, there would be a small number of local Learning Hubs, with a regional nexus providing facility and human resources and serving as a mechanism for local exchange and critique of ideas. The aggregation of these would form a global Learning hub network, which would have its initial nexus at the MIT Media lab and its affiliate, the Learning Barn. But much as the individual Learning Hubs should start small, so should the network. For example, 4 to 6 regional Learning Hubs would be an ideal number of founding members with the hope that many more research centers might join in the future.

2. Some Proposed Forms

We spell out some possible designs for the Local Learning Hub (LLH) with the practical goal of making suggestions but also with the conceptual goal of developing the idea through concrete cases. We begin with what we call the "City Model" because our liking for concreteness favors thinking very specifically about a special case, which we locate in a city in a developing country. But the names of the models are somewhat arbitrary and the goals only superficially different: **the essential goal in each case is to put together a combination of conducting a cutting edge educational pilot as a basis for the development and public dissemination of ideas about learning.** In particular the public as well as the communities of professional educators need to be introduced to visions of learning quite different from the structures of traditional schools. As a foundation for this shift in mindset they need to understand how digital technology can be used as a constructionist[2] as well as an informational medium and how the acquisition of technological fluency goes far beyond learning to use office software.

Design 1: The City Model

This design envisages an organization with multiple facets which we describe separately even at the risk of some redundancy. The principle of starting small suggests that not all the facets be implemented at the start; however the spirit of the design as a coherent concept implies that they are all anticipated at the time of launching the Hub.

2 Notes on the educational concepts mentioned here (constructionism, technological fluency etc) can be found at the websites learning.media.mit.edu or www.papert.org or via the Epistemology and Learning group at the MIT Media Lab.

A. The LLH (Local Learning Hub) as public access technology/learning center

The face most visible to the general public is our synthesis of the best of the ideas that go under such names as "Technology Center" ... "Science Museum" ..."Learning Center" ... "Children's Museum" ... "Computer Clubhouse." It is a place where people can come for a few hours or for a few whole days to see, learn participate in intellectually rich, future-oriented activities. It will have a special concern for children but will draw people of all ages and especially families and other groups of people of mixed age.

Allow us to make an important distinction. While we may use familiar terms and refer to familiar institutions such as schools, museums, and so on, a major part of this effort is to break the assumptions about how they must function and the roles people play in them. For example, an assumption deeply embedded in museum design is that people will only spend at most five minutes at any exhibit. Thus, since there cannot be a deep engagement, the designers concentrate on providing information or an "oh wow" experience with the hope that the depth will come later. This need not be the case.

B. The LLH as school

A special feature of the Learning Center is that most of the work – R&D as well as operational -- is done by young people between the ages of 8 and 18. In addition the students are given the opportunity to form their own small businesses that will be subject to the discipline of a market although the ground-rules will require that more attention be devoted to self-conscious learning. This is not exploitation of child labor. It is a concept of learning by doing. At the core of the LLH is a very special school in which work, play and learning are richly combined. These students spend all of

what would normally be school time at the LLH, which therefore serves as an alternative school. The fact that they are also doing socially meaningful work of a kind for which professionals are paid salaries does not imply that their learning is either diminished or less academic. Quite the contrary: when we look at the details of what they will be doing we will see that it is enhanced to a level higher than the expectations of the best schools.

C. The LLH as center for research and innovation

The young people will be guided in their work by a staff of professionals who are proud to be teachers in this sense. But their work is very different from the image of a classroom teacher "trained" to implement a curriculum whose main lines have been imposed by a hierarchical system. As they teach they are creatively inventing a new image of "teacher" to fit the needs and opportunities of the twenty-first century, they are exploring new educational content.

D. The LLH as center for community development

A fixed curriculum stands in contradiction to a learning environment based upon the interests and initiative of the participants. An LLH can take the host community as a basis for study and activity. Students, staff, and parents can research the life of their community and implement projects designed to improve life in the community. Most importantly, this helps enhance the relationship of the participants with their community and reintegrates the learning environment into the full-life of its surroundings.

E. The LLH as incubator for small technology-based business

As we discuss more fully below the new content will include such topics as "invention" and "entrepreneurship" as well as the skills that would support the kinds of invention and entrepreneurship appropriate to the particular LLH's local area. But in line with a general philosophy of learning by doing if these topics are discussed they will also be practiced. And doing so will

do more than improve learning: it will give the LLH a richer set of connections with the life of the community in which it is placed.

F. The LLH as center for intellectual and political discussion on the future of learning

One of the major sources of resistance to change in education is the general public's low level of knowledge about modern ideas and new needs for learning. A central function of the LLH will be to nurture the development of forward-looking attitudes in all segments of the population. Among many ways of doing this are: regular and occasional meetings at which the future of education can be discussed at various levels that correspond to the interests and needs of different segments of the community. In most cities even professional educators do not have access to informed systematic discussion of future-oriented educational issues.

G. The LLH is a site for professional development of educators

A particular example of the previous function deserves special mention: this is providing a place where advanced students of education could serve internships to enable them to learn about future-oriented learning through direct participatory experience.

Design 2: Village Model

We have had some recent experience in two countries – Costa Rica and Thailand – with projects directed at developing the learning environment of small villages where the full structure of the City Model would not be feasible as a self-contained local organization. In both these countries we have been collaborating with a larger central organization that already carries out some of the functions of the City Model. Our initial conceptual plan for the village model is to draw on and integrate village-based activities from these two situations.

In Costa Rica the village activity is school-based. We have worked for more than a decade with the Omar Dengo Foundation, an organization created by the Costa Rican government in order to carry out a large-scale introduction of computers into all the schools of the country. This program has already set up computer labs in more than half the schools and is now facing the problem of extending the program to the remaining schools. Most of these schools are very small, many what are classified there as "one teacher schools." We join with the Omar Dengo Foundation in seeing work with these small schools less a difficult challenge than as an opportunity to develop pilot projects for deeper change than can be brought about by a computer lab in a large school.

Small schools have often been regarded in the past as the orphans of the educational system. However constructionist uses of digital technology together with connectivity turn the tables, so that in many ways these schools are ahead of the larger ones. In the past the small school could not afford science labs and libraries and did not have the larger spectrum of expertise that could be provided by a larger teaching staff. These deficiencies can now in large measure be remedied without losing the powerful strengths of the small villages school: a more intimate relationship with the teacher, a closer connection with the community, stronger student independence and collaboration, and freedom from the tyranny of age segregation. We hope that the Learning Hub will provide support for the task of removing the deficiencies while retaining and embellishing the strengths so as to form a school structure that will serve as a model for schools everywhere.

In Thailand our village work has also been carried out through a relationship with a local organization, the Suksapattana Foundation, set up to promote innovation in education. Here we have worked with a greater emphasis on promoting the development of the learning environment outside of the formal school system. We have worked with centers of informal education and directly with adult villagers on applying digital tech-

nology to immediate problems ranging from the design of irrigation systems to developing channels for direct sale of local artisans' products through e-commerce. The goal is always double: to contribute to the immediate problem and to enhance the learning and technological cultures of the community.

Design 3: The Early Childhood Model

Here we address a situation where there is a strong interest in children too young for the role as research and operational staffers for public-oriented activities of the kind we placed at the center of the City Model. In the case of the youngest children operational roles are not appropriate at all; for older ones operational work is possible and valuable but has to be of a different kind.

The model we propose has three elements corresponding to the three main goals that define a Learning Hub:

- **Conduct cutting edge learning projects.** The material basis for the pilot learning environment is defined by having free access to laptop computers and technological building materials such as the extensions of LEGO Mindstorms being developed by projects based at Drake University in Iowa and at the Reggio Emiglia schools in Italy. The educational basis is developing constructionist activities to allow the technology to become an integral part of the best kind of developmental practices and to promote the acquisition of technological fluency in a spirit of "whole learning".
- **Develop depth of the educational culture.** The Drake project has been exploring the development of a new kind of course for future teachers based on the anticipated widespread use of constructionist technological materials. This is providing the context for drawing faculty and research from the University into close involvement with the pilot work with children.

- *Conduct public education*. A LLH with a focus on early childhood can contribute to the education of the public in many of the ways set out in the outline of the City Model. It also has a special opportunity for public education about parenting in the digital age.

3. Action

This paper was written to precipitate discussion and action. All its ideas are formulated in the expectation that others who agree with them in principle will contribute to their further development.

We are sending the paper to a small group of educators who might be interested in joining this endeavor. This is an evolving document. Those who are interested are invited to send comments to our Director of Special Projects, Jacqueline Karaaslanian [jk@media.mit.edu] to influence our next version.

If the response confirms our impression that this is the time for this kind of action we will then establish a Learning Hub website through which more focused discussion can begin.

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