

# SyllabusWeb

useful information on technology used to enhance education

[About SyllabusWeb](#)
[Contact SyllabusWeb](#)
[Site Feedback](#)

 A Division of  
101communications LLC

See host access transformed  
for easy OS migration and more

► **Syllabus Magazine**

#### SUBSCRIPTIONS

Syllabus Magazine  
Syllabus Newsletter

#### WEEKLY UPDATES

Academic Job  
Board  
News, Resources,  
& Trends

#### MAIN MENU

Conferences  
Syllabus Magazine  
- Advertising

#### SYLLABUSMART

Product Guide

#### SYLLABUS ARCHIVES

News, Resources,  
& Trends  
Syllabus Magazine  
Product Guide  
Text Archive

#### SYLLABUSWEB

Home Page  
Site Map  
101 Solutions

February 2002

## Highlights from Syllabus Magazine

### Interview: Lippman on Learning: Fundamental Changes

Syllabus interviews Andrew Lippman, founding associate director of MIT's renowned Media Laboratory, to explore how technology will transform our notions of teaching and learning.



**S-Many students are going off to college with laptops, cell phones, and handhelds. Will these mobile devices be useful for educational purposes? Will they be used more for socialization?**

AL-We spent ten years thinking about whether kids should have calculators in class or not, and you know what? It is ten years later and we don't even think about it anymore. It is just part of your life to have those things. I think they are things you are just not going to think about. They will be as much a part of your life as a pencil as time goes on.

Almost anything that you can carry around and use at your command is in some way useful for education, if only as a reference. In the case of these active devices, their main impact is that they shift control of knowledge from the teacher or classroom into the hands of the student. This is a shift that has been going on in spite of the educational establishment for the past 20 years, and now it is unavoidable. But more important, these are not just portable dictionaries, they are active and connected resources.

Consider by analogy a hand-held [Global Positioning System] versus a book of maps. The latter is consultative, while the former engages you in navigation in new ways. Now, extend that GPS into a programmable environment, and suddenly one person will insert the place into his e-mail, another will sort information by location, and yet a third will leave reminders for the next visitor to a specific place. In each of these cases, the student has re-invented positioning in imaginative ways that go well past the expectations of a navigation class.

We cannot deny the socialization aspect of some of these communications devices. The adoption curve of short messaging in the UK from 10,000 per month after introduction to 1 billion messages sent in the last year shows that simple interactions go a long way. I expect that it won't be long before rote questions on tests are answered the same way that the "lifeline" is used on the Millionaire television quiz show: you will get a communal answer.



weather.com

Enter City or US Zip

 ? 

SyllabusWeb is  
co-sponsored by:

**COMPAQ**

[Privacy Guidelines](#)

[101 Conferences](#)

### **S-What do you think about "student-centered" education, and about the ideal of lifelong learning?**

AL-I consider myself more of a researcher than an educator, so quite naturally I believe that being engaged in research is the best way to learn. It also may be the best way to re-think the dichotomy between pupil-centered education and its alternatives. Further, equating research with learning transforms education into a lifelong experience almost by definition.

Tom Magliozzi, MIT grad and co-host of the *Car Talk* [National Public Radio] program lectured in one of our classes and noted how we seem to do education backwards: we teach kids techniques before they have any appreciation for what use those techniques have and before they have any personal meaning. That is a recipe for segregating school from life. His answer was to do it the other way around: first work, then learn as you need to.

The point is that learning is a natural activity that takes root when you do it yourself and when there is an emotional reason to be attached to the knowledge. Whether that is "student-centered" or the result of an inspired lecturer is less important than engendering the notion that learning is continuous, natural, and fun. As [Seymour] Papert has said, perhaps hard fun, but fun nonetheless.

### **S-Why wasn't it that way in schools in the first place?**

AL-Who says it wasn't? It seems clear that we transformed education into mass production at around the time we invented mass production of industrial goods. Perhaps at the time, it was sufficient to learn the three "Rs" in order to lead a useful life, perhaps it was just the mass number of people that had to pass through the educational mill. In any case, when we democratized learning, we lost something as well as gained quite a lot.

?? The problem is that we now require more than basics in order to function in society. The jobs are more intellectually challenging, and the terrain is shifting too rapidly. You won't work in the same job for a lifetime almost no matter what you do.

We have the technologies to expedite individuality again. The real question is whether we can transform the teaching environment from factory work to tutoring. That is a complicated social and personal issue.

### **S-For a long time, we have had libraries that have a very specific way of keeping track of information, and now suddenly we have so many different sources and kinds of formats. You can grab information from just about anywhere. How is this going to evolve?**

AL-My sense is that things will not be as random, anarchic, and disruptive as we fear in that regard. Three years ago, the answer would have been different. Three years ago, the answer would have been yes, you are going to get overwhelmed with all kinds of bits and we better invent things like agents, validators, and so on that separate the signal from the noise. Or a living, trusted community might do that. You will end up going to sources that are recommended to you by others. Maybe we can build indexing systems that can grow as quickly as the amount of information that needs to be indexed, and so in a sense, what happens is the things that get corroborated rise to the top and the things that are outliers will sort of be off on the tail and get canceled out. This might have been the answer three years ago.

I also think that there is another flywheel that we are not taking into consideration. That is the general flywheel of society, that we don't overturn traditional institutions as quickly as the technology allows. In reality, we have another generation where the *New York Times* is going to be the newspaper of record and not Matt Drudge. There will be a paper of record, and the library is going to be the repository of record, and those institutions will in a sense be what really does it.

**S-Some of the technologies you work on at the Media Lab may ultimately be used in education environments. They may be quite radical departures from traditional education, such as immersive environments. How do you know that those technologies will be effective for education?**

AL-For the sake of this question, there are two kinds of endeavors that go on in laboratories like ours. One is those that are specifically targeted toward use and learning. They are investigated, tested, tried, and explored in learning environments. The issues of whether they are effective or whether they are worthwhile or ethical are while not solved, at least pursued in the same vein that one would pursue anything else in that kind of targeted world.

There is a theory of learning that pervades the media laboratory and the theory is one that really derives greatly from the guidance of Seymour Papert, and that is that learning is the province of the learner, it is the constructive exploration that an individual does. Education is a question of providing the resources by which you do that and the motivation. That is one of many educational theories or learning theories if you will, and so that is the one that we explore. If you don't buy it, then you sort of shop elsewhere.

But far more interesting is the rest of the work: that which goes on independently of any specific education goal. This is where the real surprises come from. For example, the insight that avatars can engage kids in storytelling and expand their ability to think and create, or that a network of sensors can allow a kid to send a dance step as e-mail, or that watching television with friends who you see through an online connection can help explore the material. We don't know how these ideas will be used, so we let kids of all ages try them out.

**S-You've said that distance learning doesn't scale. Is that correct?**

AL-It doesn't scale because it can't include the experience. It is hard to wholeheartedly fall in love with distance learning because the truth of the matter is, there is a chemistry involved in being in the place. There is just no way that you can match that chemistry through any kind of wire. However, as Duderstadt notes, the current university system doesn't scale so well either! So, it may be the best that some people can do. Personally, I would rather explore a different solution that moves the school into real life.

For example, in Maine, there is a network of colleges, and a similar network of graduates. Suppose the classroom exercises in automobile mechanics were problems contributed by the alumni and worked on jointly with the enrolled students. Not only would that bridge the distance, it would probably increase the endowment.

**S-Is the rate of technological change going to out-pace efforts to introduce learning technologies around the world?**

AL-The truth of the matter is, change is faster today. The reason is that the rate of change of society is a function of the age at which you gain access to the dominant technology. The entry-level age for computing and communications is 2 to 4. So, at least in North America, kids are now learning their stuff by 4 years old.

This has two implications that are relevant here. First, the educational environment is no longer fixed and stable. It is evolving faster than the rate of turnover of teachers or educators. Therefore, the nature of the profession and the workplace will change whether we like it or not. It is a mistake to think of this as introducing learning technologies. It is a matter of keeping up with the learners.

Second, it makes it that much more important to diffuse these technologies throughout the rest of the world. People need to be versed in the dominant technologies of the day early or they will not do it at all. When the industrial

revolution began, the farmers didn't get new jobs, their kids did. Perhaps we need a "bit corps" equivalent to the Peace Corps of the 60s.

**S-Given that, are we headed for very fundamental changes? Or do we just need to make adjustments along the way?**

AL-I think that we are at the cusp of a real change both culturally and societally. This is not just a technology change; the Net is not just a telephone system that talks to computers, nor is it just something that works better than the phone system. We are using communication networks that are fundamentally different from any other communication systems that we have ever had before: they connect groups and social structures. This is something that we don't understand and exploit. But it is worth trying to think about and understand. That is what the next five years is all about. Bringing communications to the world.

[Return to Table of Contents](#)



---

[About SyllabusWeb](#) | [Contact SyllabusWeb](#) | [Site Feedback](#) | [News, Resources, and Trends Academic Job Board](#) | [Syllabus Conferences](#) | [Syllabus Magazine Advertising](#) | [SyllabusMart](#) | [News, Resources, and Trends Archive](#) | [Syllabus Magazine Archive Buyer's Guide Archive](#) | [Syllabus Text Archives](#) | [Site Map](#) | [101communications, LLC](#)

---

Copyright © 2002 101communications, LLC -- All Rights Reserved

[top](#)