MAS 790 - The Nature of Constructionist Learning
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Real chocolate

The last four months were a revolutionary experience for me. As I cannot separate my personal experience from the content of this paper, I thought it would be a good idea to write with a more personal style. The first impact of this experience was cultural: adapting and getting to know, in an immersive way, two cultures: the North American and the Media Lab’s. The first is an impressively practical one that values the individual, his personal space and values personal success above all. “Loser” is the worst way to offend someone. Also, in the public discourse there is not such a thing as a left/right political debate, which is between center-right and extreme right. Finally, in economic terms, it’s a rich country – and that has an overwhelming impact in the mindset, much greater than I expected.

The second culture is the Media Lab’s, with its high level of competition, pressure for results, lack of theoretical reflection and an impressive history of achievements.

But what is the relationship between this impact and education?

In the first place, the American culture, being result-driven, pressures the educational system towards “professional” training in a general sense, instead of focusing on knowledge as a personal achievement for citizenship. Also, the public discourse rejecting any “leftist” ideas rejects also some important issues and thinkers, specially the Marxists. The political discourse is much more based on personal issues (as we saw from the election, where conceding it or not became a matter of ‘stubbornness’, and not a political or ethical issue).

Being a rich and powerful country, the waste of resources is impressive, since disposable cups and plates to electrical energy. Also, a feeling of superiority contaminates the whole society, and other countries, specially developing, are regarded as “failures” that need help.
In the Media Lab, given the high competition among its members, as well the kind of coverage from the media, projects are often conceived for a short-term period with small commitment from its creators in the long run. Another factor should be taken into consideration: technology has such a central role in American lifestyle, and technology is a powerful simulation machine (video-games, VR, websites, digital imaging, cinema, food etc.). The result is that – surprisingly enough, the “real” world has a particular meaning: real people, real relationships, real beaches, real sunlight, real orange juice and real chocolate. Some days ago, at the supermarket, I was amazed to realize that the cookies package had this phrase as a marketing strategy: “real chocolate”. Chocolate is already an “artificial” kind of food, and even that can be artificial in the USA. The impact of such a culture of the artificial, of the simulation, of things that are not but taste like, of places that are not but feel the same, of people that are not but talk likewise, is enormous.

**Where is education?**

In Brazil, we recently went through a dreadful process of change of the role of State, in economy and in society. They are controversial changes that awoke an excited debate. The process was marked by a crash of secular paradigms: more and more, the logic of the political and social events seems to integrate at the market and their rules. In a time of growing desindustrialization, concepts before restricted to the industrial environment, as productivity, went outside factories to be integrated into our daily life. At the same time that it decreases its economical power and glamour, industry and its logic transcends the production of goods and integrates into the “production” everything else, material and immaterial. In that new social configuration, countries, companies and people that do not accomplish the expected “productivity”, in every sense, seem to be more and more distant of the “great stream” of global development. In Brazil, for instance, the state-owned companies became our great obsta-
icles for progress. Seemingly inefficient, and unproductive, their only remedy was the redemption through the magic “private efficiency.”

Now, even education, which has been resisting to the “modernizing” anxiety for a long time, faces the obligation of productivity, of reduction of costs and optimization. “Studies” point to the low productivity, giving statistical “proof” for the need of change.

Some new “education gurus” defend now the idea of distance learning, of new technologies for education, of “learning by doing”, “project-based learning”

Carol Becker, in “The artist as public intellectual”, is surprised with that overpowering process of colonization of the business logic in all of the human activities:

“It is a time when many of us feel that the collective work of the sixties, seventies and eighties [...] it is eroded daily. It is a backlash - a ‘counter counter-cultural backlash’, as The New York Times called it [...] reminding us that not even the progressive language is safe of the appropriation.”

[BECKER1995, p. 13]

Becker mentions, still, her concern with the frequent attacks to National Endowment goes the Arts and to National Endowment it goes the Humanities that finance researches in Arts and Humanities in the USA. According to her, those attacks have

“... little relationship with budget problems and a lot of relationship with politics.”

In the reproduction of Levi’s advertising [LEVIS], the company offers a surprising service: we can choose the size, color, bolt type and cut of a pants jeans and to send the data through a reselling store. In fifteen days, we will have our jeans personalized ready.

Many gurus celebrate that service as the end of the mass production and of the birth of a wonderful personalized production system that will emancipate us from the dictatorship of the mass production, and allow us to enter the happy “customized” world.
Paul Smith, in the interesting article “Tommy Hilfiger in the Acts of Mass Customization” [PSMITH1999], says that the North American industry of clothing, in the nineties, had two basic concerns.

- Personnel reduction in the USA factories;
- Acceleration of the product creation process, as well as the manufacturing and distribution of new products.

The first goal is clear: to transfer the factories for the third world, where costs are lower. The second is just a consequence: to concentrate product design in the countries of the First World. Robert Reich, apud Smith [SMITH1999], in “The Work of Nations”, states that companies should be ready to take advantage of the world idle capacity and not only to explore the outlying countries, but to promote its development. However, it is “prescribed” that just the production in large scale and with high standardization degree should take place: in other words, to put a larger distance between the physical production and the intellectual work. Reich also mentions the recent government policies (with great support from the press) against illegal immigration and underpaid work as an indicative of this: the idea is to obstruct the emergence of “third worlds” inside of the countries of the first world.
Jeans and workforce, however, they are not also the central subject of the text. But it is an interesting sign: one of the greatest symbols of massification of our century, the Jeans, is going to be mass personalized. Not surprisingly, education is going through the same process. The new technologies promise personalized, modern, free, creative education etc. They seem excellent promises. However, even if jeans can be personalized, the consumer relationship with the product remains the same. In certain way, it is an even more narcissistic process, as described by Jean Baudrillard in “The Consumption Society” [BAUDRILLARD].

Similarly, nothing assures us that the “rules” in education will change with the coming of the new technologies. Will it be a change that comes so that nothing changes?

The resurrection of the “new education”, nevertheless, has to be regarded with attention: are the changes pointing to a real emancipation, to develop critic and autonomous citizens or just a technologically-literate workforce (to be more productive with the computer), with multitasking skills (to do the work of many people), highly creative (to create new products faster than other companies), project-trained (to conduct professional projects better)?

**Objects and life**

When we talk about having projects in different developing countries, I notice the traces of the American culture, which were mentioned before: the “real chocolate” phenomenon. As reality and simulation have so blurred limits, “developing” countries are regarded as a vague, distant place were people do not eat three times a day, children die in the streets, democracy does not work, the environment is being destroyed and people are normally less qualified. These places “failed” because they cannot find the “way”, or they do not have the financial resources. Coming from a developing country, I know that this mindset is very distant from reality. There is an international system in place that assigns roles to different nations, as
mentioned before. When a company goes to a country seeking a cheap workforce, it is reinforcing the low-income policy. The idea was born in this context, trying to refuse the mindset that developing countries need “help” and that everything goes well in the USA. If we are researching about education, we should not depart from the idea that changes are not necessary “at home”. On the contrary, having people from many countries working together in a meaningful way, regardless of their nationality or income, seems a very powerful way to change education.

Regarding specially (but not only) science and technology learning, as we discussed many times during the semester, we have a very established mindset to break: that Science is a “hard”, “dry” discipline. This impression is indeed true, if we remind how the official schooling system is structured:

- Science is out of the context.
- Science is impersonal: the good scientist is the “impartial” person, with no “feelings”.
- The historical path of the scientific discoveries is lost, as we just get to know the final result, yet the process is highly interesting.
- Science is not relevant to everyday life.
- The way we learn science is not like arts or history. It should be separate from all other disciplines.

The idea of using everyday objects to alter the way we learn Science and Technology to address those issues:

- Everyday life is full of meaningful technological objects.
- These objects are in the context.
- They have an emotional meaning.
- The objects have a history.
- They are really relevant to everyday life.
- Their use is integrated in everyday activities that are obviously transdisciplinary (are life is, after all).
In Figure 2 we can see an overall diagram of the process. The first part is the mapping: students should construct a topological map of the daily life, asking themselves questions as “What do we use for shelter/transportation/storage/cooking/exchanging information/expressing artistically?” “which objects are involved in these activities/processes?”. The number of objects in our everyday life is enormous, so at this stage it is important to adapt the activity for the time available and to the setting: in/out the school, one hour/one day/one month/lifelong activities etc. After the mapping, the Transforming phase comes - when participants would discuss in groups and decide which objects they want to work with. At this point, it is important to have as many resources as available (library, internet, friends, parents, specialists etc.). The role of the teacher(s) here is very important, to help in a non-intrusive way, ask questions, help finding information, contact other specialists etc. Also, an important part is to document the progress of the groups/individuals. The building materials and technologies (computers, languages, “Legos” etc.) should always be available locally, and the use of everyday materials and tools should be stimulated, as well as trash, disposable objects etc. The third part is the integration of the object in life. This present many issues: how do other people in the house/community react to the new, transformed object? Are power structures inside the family/community al-
tered with it? This discussion, together with participants, is very important and should be part of the activity - in the end, technological objects make their way into daily life because a certain context was in place - sometimes there are rejected, or they transform the context in order to be accepted. Understand this process in a very rich process that would empower participants to have a critic approach to technology and to his social context.

In Figure 3 we observe another important part of the process: participants documenting the work of their own groups/other groups. The idea is to stimulate a new approach of documentary, not the classic “host and studio” format, but rather a highly creative one, integrating arts, sports, and language as analogies to explain or introduce scientific concepts. The availability of digital technology should not be mandatory to accomplish this task, as it can also be done with “analog” technologies that are more common in certain cultures.

In Figure 4 we have the last concept: meta-documentation. In order to de-mystify and explore the language of the moving image as a semiotic system, the idea is to propose meta-tasks, as documenting the process of making a documentary.
Figure 4
Meta-documenting the process

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Real chocolate, real people, real life

This ‘seed’ of the project is largely due to the extremely rich discussion we had in class, about objects, construction (Piaget, Papert), the role of tools and motivation (Vigotski), powerful ideas (Papert), epistemological pluralism (Papert & Turkle), the importance of everyday objects and the social and political issues in education (Freire), among many others. Rather than a “project”, I would like it to be a “framework”, which could be adapted to different countries and cultures. Also, our role as researchers is not to “help” people understand what we do, our culture or ideas. Our role is to learn from people, from every part of the world. Our role is to go out there, eat real chocolate, meet real people, share real lives.
Resources in addition to the class material


