

1 Didactical material about the method of introducing Imagine and co-laboratories into local learning settings (EN, to be used by project partners).

By Andrzej Walat (OEIiZK-PL)

If we want to think about new literacies – and, I think we must, given their importance – we must also free ourselves to think about the coming decades, not just next year.

Andrea DiSessa (in Changing Minds, Computers, Learning, and Literacy)

Integrating Polish mathematical microworlds into local learning settings is a very compelling task, mainly because we have chosen very ambitious and long term goals.

In our opinion the actual Polish secondary mathematics curriculum has serious gaps. Very important issues like randomness are introduced only marginally. (a Polish secondary math teacher has no obligation to introduce topics like random variable till the end of school education). There is almost no discrete mathematics in the curriculum. Important issues like linear equations are introduced in a very old-fashioned and inefficient style. All this is in some way understandable because all these topics so important to understand the modern world are difficult to introduce with only a blackboard and pencil and paper. The secondary teachers feel no must to introduce the notion of random variable distribution or expected value because they have other duties – to prepare their students for the external examinations – and because they regard topics like random variable and others as extremely formal and difficult. So our first aim was and still is to change these common believes, to show that if we have modern digital tools and use them appropriately then the unachievable goals are getting achievable.

We want the teachers to use the tools we have developed for them and for their students. But we want them not only to be competent users of the ready tools but also to create their own tools by themselves.

The starting point of our strategy was answering the question: What stimulates creativity? Why people want to paint or to compose music? One reason is because they are admirers of Raphael's or Pablo Picasso's painting or Leonard Bernstein's music. They want to paint like a second Picasso or compose like Leonard Bernstein. But of course not every one succeeds in realising this dream. Many don't even try to achieve it. Why? Probably they don't feel talented enough and think that good painting or composing is far out of their "zone of proximal development". It is the reason why we have decided that four of our five microworlds should have a structure of connected 10 – 20 smaller micro-microworlds not trivial and pedagogically sound but relatively simple, understandable and manageable. We want them to serve as a starting platform for numerous teachers in their own creative activities. Of course all this needs time, but first results of our experimental workshops with secondary mathematics teachers (see point 9 and Web page colabs.oeiizk.waw.pl) are very promising.

We are fully aware that even such projects that seem simple to us the developers of the CoLabs projects may be too difficult to build by an inexperienced teacher. To become creative developers teachers need help and a scaffolding, and so we decided to open the LSPE. The acronym LSPE comes from the Polish full name Logomocyjna Szkoła Projektowania Edukacyjnego (the English translation is: The School of Imagine Educational Developers). Actually it is a small but crucially important part of our Polish Colabs Web page. It is relatively new because we opened our Polish WebPage in October 2004 and LSPE is a new enterprise, which we decided to start after realising our main obligations to the Colabs project (developing 5 mathematical microworlds). We want our Internet school to be a long-lasting open community of learners. We intend to develop our school on the following basis:

1. We want our teacher developers to achieve excellence, but we promise to take care that at least 50 percent of our exemplary Imagine projects that we put on the Web should be as simple as possible – the full instruction on how to build the project should be no longer than one page.
2. We look forward. Our very important aim is to prove that both curriculum and methodology of school mathematics must change and even very deep changes are inevitable and possible but we promise to take care that at least 50 percent of our exemplary Imagine projects that we put on the Web page should be useful immediately now.

It is our strategy to increase the number of teachers interested and active in collaborative integrating Imagine and collaboratories into local learning settings.