

Exploring the processing of formatted texts by a kynesthetic approach

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The context

A teaching activity about word-processors: 25 pupils in 9th and 10th grades. The learning objective was the **understanding of the challenges posed by the automatic processing of formatted text**. Pupils were requested to work in small groups to foster confrontation and almost every task was proposed together with an accompanying meta-cognitive reflection.

Methodology

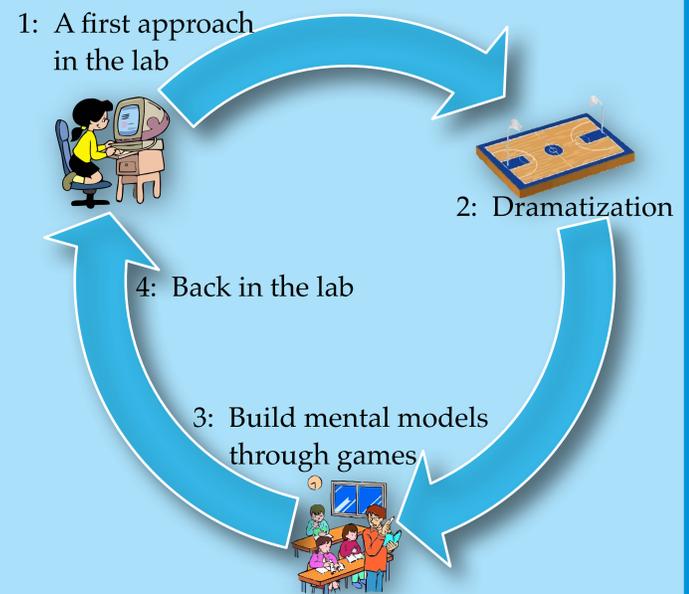
Algomotricity

Algomotricity aims at replacing an abstract symbolic manipulation by physical activities, which should help the pupils in developing their mental representation.

- Computers and software tools should be of secondary importance, but the conceptual link with them should be clear.
- The approach should be mostly *allosteric*: the direct transmission of knowledge should be kept to a minimum, and pupils should be forced to reconsider their mental models about text formatting by discovering themselves useful techniques.

The algomotricity "loop"

1. A first approach to text formatting with a word processor.
2. A *dramatization* of the process through the use of tangible objects.
3. A game designed to force pupils to restructure their mental models and discover the power of symbolic meta-languages.
4. A final use of special software tools for formatting texts, also capable of showing the data structure used to record the meta-information.



The activities

Activity 1: in the lab

Discover that formatting is not just an aesthetic issue, but it also has an important role in transferring information. Pupils (working in couples) were requested to produce a formatted text. *Which type of formatting did you use? Why did you choose it? Did you use more than one formatting for the same piece of text?*

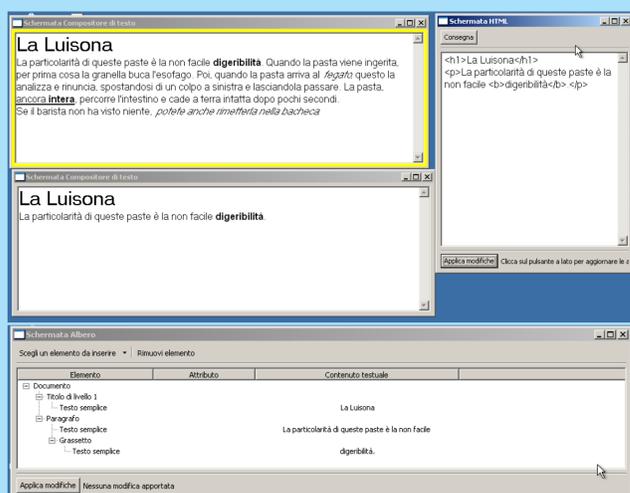
Activity 2: in the gym



The proposed task was the reproduction of a formatted text on a big copy of the text put on the floor. Formatting had to be *codified* by using the objects available in the gym. Every group of pupils (6 persons) was requested to write down the rules they used in the *codification* and another team had to interpret these rules to get back to the original formatted text.

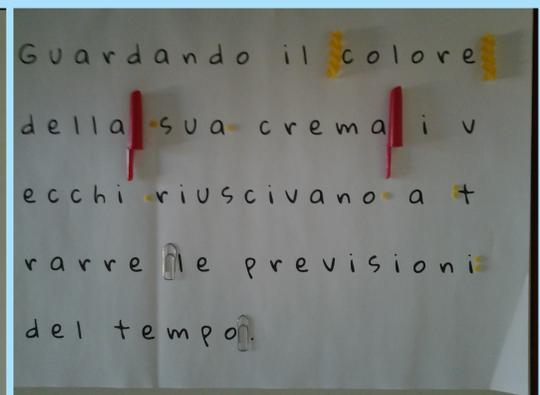
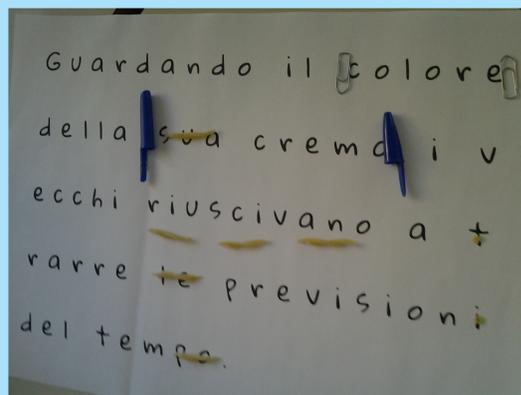
Activity 4: Software

An ad-hoc software tool was used to show the formatted text according to several views: mark-ups, WYSIWYG, object tree.



Activity 3: in the classroom

Teams were again requested to reproduce a formatted text with objects and write down codification rules precise enough to be followed by another team. However, the task was made more challenging by the introduction of a "cost" for the objects. The cost incentive was enough to let the pupils discover what is commonplace in *mark-up languages*: the use of tags at the beginning and at the end of (possibly overlapping) regions.



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