Evaluation of ERGOLAB

Monique Noirhomme-Fraiture¹, Luc Goffinet¹, Clairette Charrière²

¹ Facultés Universitaires Notre-Dame de la Paix, Institut d'Informatique,
rue Grandgagnage, 21, B-5000 Namur (Belgium)

² Hôpital de Bicêtre, Rue du Général Leclerc, 78, F-94275 Kremlin-Bicêtre (France)

Goal

ERGOLAB is a software intended for *measuring* the abilities of users with special needs when they interact with a computer. It is mainly meant for *children with cerebral palsy*.

Principles

The exercises proposed to the user are *progressive*. Each level can consist of several exercises, ranging from the most simple to the most difficult ones. Each exercise can be done in two modes: *practice* or *test*. The latter enables *statistical data* about the user's performance to be *recorded*: response time, error rates, pressing time. As ERGOLAB was designed as an evaluation tool, and not as a learning tool, the screens have been designed with *simplicity and clarity*, so as not to distract children's attention from their task.

Evaluation

ERGOLAB is currently used by hospital Kremlin-Bicêtre in Paris, and occupational therapists find it useful for their work with children. However, the great diversity of disabilities and the slowness of children do not allow an evaluation of ERGOLAB itself. In order to get a greater number of homogeneous observations, we have tested ERGOLAB in a school with ordinary pupils. We have made 48 children work with ERGOLAB. They were between 3 to 7 years old, with little or no computer practice beforehand. Sorted by age category, children were given the same time to work, the same instructions, the same time for practice.

Conclusions

From our observations, we have gained information on the qualities that ERGOLAB and general software for young children should have. These qualities are:

1. Find a means to help young children *validate* their answers to the program.
2. The young children also need a way to *physically centre the mouse* on its board.
3. Software for the younger should take into account the fact that children need to express with words the actions they intend to perform.
4. There is an *age limit*, under which some specific actions cannot be carried out.
5. When someone interacts with the computer thanks to a switch and through a *scanning process*, the first item in the selection is often harder to choose than the others.

Evaluation of ERGOLAB (Poster contents)

1. Goal
2. Principles
3. Exercises

STAGE 1: PRESSING A MOUSE CONTACTOR

- maintaining pressure on the contactor until an object reaches its target

STAGE 2: NAVIGATING INSIDE THE SCREEN SPACE

- linking up points on the screen

STAGE 3: MANAGING HIDDEN INFORMATION

- search for an element in different arrays

- search for an element on a wheel

4. Evaluation

5. Results

for Ergolab
for software in general