

## Adapting the Gattegno pedagogy for Clicker software

(Access to reading for demographics with speech or language disabilities)

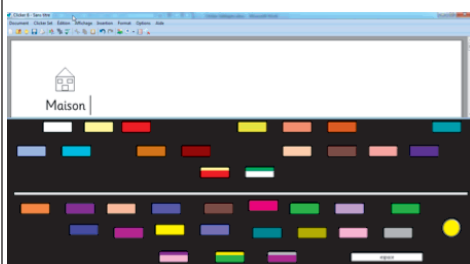
*Key words: reading, learning, software, pictograms*



(fig. 1) Rectangle panel



(fig. 2) Work in Fidel



(fig. 3) Grid background with colored rectangles and text window



(fig. 4) Opening the turquoise grid showing all the spellings of the French sound [è]

**Foreword:** the Gattegno pedagogy cannot be reduced to the sum of its parts: colours associated to each French phoneme for reading, and grammar tables..

### Introduction

"To read is to give your voice to the text", said Gattegno over thirty years ago. Recent studies in neuroscience, particularly those of Stanislas Dehaene, have confirmed this. Learning to encode and decode written French means: aurally distinguishing the language's 37 different phonemes visually identifying the 26 different letters of the alphabet establishing the correspondence between these phonemes and a number of combinations of letters, involving a number of irregularities in French orthography.

When, because of their disability, children (or adults) are unable to harness oral language (its articulatory mechanisms in particular), or do not possess the motor skills needed to write or type, they are deprived of the means of bringing their phonological development to evidence and automatising it.

### Adapting the Gattegno pedagogy for Clicker software

#### p Reading

The "reading by colours" base material:

- A board of coloured rectangles (fig. 1): each of the phonemes in French is represented by a different colour, with 37 rectangles, of which 17 represent vowel sounds.
- A phonological code of French, or "Fidel" (fig. 2): graphemes in a table giving an exhaustive overview of the entire language system for work on reading and spelling.
- A pointer which, from colour to colour, returns the sonic aspect of a syllable, word, or phrase to its temporal dimension. Pointing to a sound or sequence of sounds constitutes "writing" these sounds, and watching another point constitutes "reading" them.

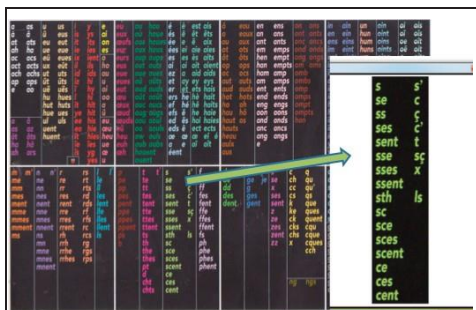
Together, these materials enable detailed work on phonology, even in the absence of speech or writing, through the use of the pointer alone. They allow the tasks involved in decoding to be broken up and the task of visually recognising written forms to be bypassed.

Some learners, owing to their motor, attentional, visuo-spatial and/or memory-related difficulties, are unable to use the pointer - which can move in 3D - and need its movement to be marked in a permanent way. With information technology, the mouse - which moves in 2D - can replace the pointer, and the computer's memory can save and recall the record of work carried out.

We have, with the help of Clicker 6 software (CRNT 04/205 file), devised a series of grid sets to adapt the Gattegno tools.

For learning to read, the features of Clicker allow you to:

- choose an image as the background of a grid (e.g. the coloured rectangles - fig. 3) and place cells over the rectangles, each of which open a grid of the same colour displaying all the possible written forms of the chosen phoneme (fig. 4);
- click on your chosen written form to send it to the text zone;



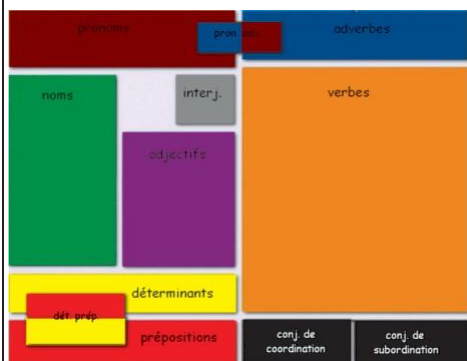
(fig. 5) Fidel, with deployment of the column

- immediately match a pictogram to this written word, if necessary;
- hear the word after a space, or the sentence after a full stop;
- print the document.

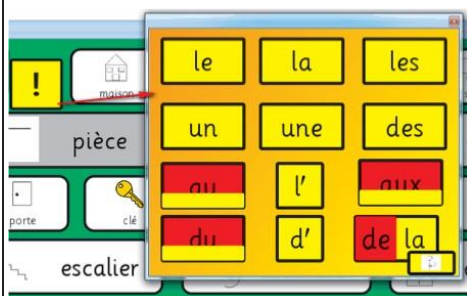
The Clicker interface allows the pupil to easily build up the stock of graphemes proposed for a given phoneme, enriching it as they gain experience with the written word.

For the most advanced pupils, the "Fidel" table may be used as the grid background:

- clicking on one of the colours will open the list of possible written forms of the phoneme
- clicking on the written form will export it to the word document.



(fig. 6) Word Category Blank Chart



(fig. 7)

### p Grammar

Children who have learnt or who are learning to speak a language trace the path of a grammarian. The Gattegno approach aims to guide them from this implicit grammar to an explicit grammar. It offers a framework to their activity of exploring the language, in the form of manipulable visual supports and concrete situations.

Equipment:

- a 'blank' board of word categories, with 9 coloured rectangles corresponding to 9 word categories in French (in practice, no terminology is offered for each category);
- a pointer allowing each word of an orally-delivered utterance to be associated, in its temporal order, with one of the rectangles.

This apparatus enables the rapid processing of a large number of utterances while using a small number of modes (no need to write, nor talk; simply pointing from box to box realises an analysis of the sentence). Thanks to the large number of examples processed in a small amount of time, reliable criteria emerge for the classification of words into categories, each being associated with a location and with a colour. This way of working makes what is going in the pupil's head visible. It aids the construction of concepts, the creation of mental images, and the student's ability to memorise information and recall it.

As for reading, the ergonomics of Clicker enable the results of the parsing to be explained and saved. The category table can be set as background grid, each box opening an inventory of the categorised words when clicked on.



(fig. 8) Willy

This organisation of words can also serve as a basis for creating dynamic communication tables. The colour code guides the user navigating the tree-view organisation, and helps them structure their thoughts to express them within the conventions necessitated by the language in question. For example, in a green noun grid, a small yellow cell will open a contextual yellow grid of determiners; the strong relationship between "yellow" words and "green" words (fig. 7) is thus facilitated. Pathways to expression are spontaneously formed over time.

### Conclusion

The Gattegno pedagogy tools - permanent visual supports - offer a stable testing ground for the analysis of language, which, for its part, is evanescent. They optimise perception as a pathway to knowledge. They come into action via the pointer. They invoke an awareness of the workings of language and allow anyone, whatever their level, to make progress in their learning process through the use of successive hypotheses. The combined use of this pedagogy with the software 'Clicker', which provides interactivity, ease of navigation, and audio feedback, and pictogram matching capabilities, contributes to bringing the underlying systems of language to the surface, and provides the means of testing them.

Some adults, illiterate due to their disability, have been able to access the written word thanks to this approach.

See the testimonial video "Willy libre de lire"(fig. 8)

<https://www.youtube.com/watch?v=ztIYJFh4iSo>

and the experience of the "Jeux de mots" in Lyon in the documentary "learning and disability": <https://www.youtube.com/watch?v=VocheYDyykk>

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