

## Diagnosing Errors in Environment of Teaching to Read

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**Abstract:** Research on the reading learning shows that it is a learning with very strong inter individual variations which requires on behalf of the teacher a strong adaptability. The adaptability of the teacher rests on the implementation of various expertises in particular of pedagogical nature and specific to the domain, of individual competences: didactic planning, analyse interaction and evaluation of learner. All this led us to conceive a multi agents system of distributed learning. This study presents AMICAL (Architecture Multi agents Interactive Compagnon pour l'Apprentissage de la Lecture) Project and a diagnostic of the errors carried out by the children during the use of the system.

**Key words:** Environment of learning, reading, didactic situation, misconceptions, errors

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### INTRODUCTION

The reading is a complex process which uses a lot of knowledges and varied natures: perceptive, linguistic, cognitive and knowledge of the language. To learn how to read is to learn how to build a sense from various written signs, letters, words, sentences and texts. It remains one of the acutest problems of the formation. The present study, are concerned in the theories of the learning of the reading goal, exposes a preliminary study on the types of errors which remain at the time of the training of the reading of French.

The present research task is within the framework of the AMICAL and relates to the analysis of the errors made by the learner. It is located in the intersection of several disciplines: linguistics, cognitive science and data processing.

AMICAL project is registered within the framework multi-field projects. This project aims at exploring the contributions of new cognitive science and information technologies in the development of environments of assistance to the learning and the teaching of the reading. The multiple concept of learning of the reading covers situations of training, from the initial training in educational environment to elimination of illiteracy of adults.

Initially, AMICAL aim a situation and a particular training that to learn how to read with children in normal schooling at the beginning of their training. It wants to be

an environment of assistance to the learning and teaching from point of view of individualization of teaching by the system of data processing and with a collaboration between the system and the teacher. In both cases the environment must be able to implement the expertises allowing this individualization. It offers new tools to facilitate the first formation for reading, to help the teacher in the cognitive diagnosis of the learner and the planning of individualized activities. It aims at child public in educational environment.

AMICAL adopts an approach constructivist which places the student in the center of the formation, it establishes its knowledge itself. The characteristics of the French language will evoke which are at the origin of the errors that pupil has make in situation of training.

**Relation between the reading and the writing:** According to Fijalkow the writing requires a deliberation deepened, it requires a clear representation of what learner wants to learn and the learning is carried out by the writing, while "the reading provides to the writing the elements which it needs to be exerted".

Perfetti<sup>[1]</sup> consider that there is closed connection between orthography and reading, the two processes use lexical representations which include orthographical and phonological elements.

Reuter<sup>[2]</sup> noted a lack of research in the read-write interactions in the didactic field. Nevertheless, it thinks that more these relations and these interactions read/write

"are functionalised (made operational) and are clarified, more the effects seem beneficial for learning".

For Ehri<sup>[2]</sup>, "To learn how to read and to learn how to spell, it is the same thing, or practically the same thing". According to Ehri and Wilce<sup>[4]</sup>, Greenberg<sup>[5]</sup>, Griffith<sup>[6,7]</sup>, Juel *et al.*<sup>[8]</sup> the performances in reading and orthography are strongly correlated. There is a transfer of the reading to the orthography, but the reverse is not proven.

A study was made known the role of the analogies used in the learning of the reading and writing by Gombert<sup>[9]</sup>. Almost all the authors recognize that there is, but they do not agree at the time to which they are used. It raise the phenomenon of "orthographical vicinity": the reader use analogies which exist "between the words that there knows and the configurations orthographical with which it is confronted for the first time".

Just like "two colours mix and give some another, two letters which have different sounds mix and give another of them".

**Errors and didactic situations:** The analysis of the errors is done according to the didactic situations retained for the training of the reading within the framework of the AMICAL project. There exists of the general errors of order, others are specific to these situations.

**Didactic situation:** A didactic situation is defined like an activity likely to be proposed for the learning of a field<sup>[10]</sup>. Among the didactic situations retained in this project,

- Presentation of text : Where a text illustrated by a drawing is posted on the screen and can be read by the system.
- Recognition of words in context : Where it is requested from the child to recognize in a known text of the spelled words.
- Identification of words in a list of words : The pupil must identify words integrated in a list of words.
- Differed writing : The child must rewrite a word which has been just presented to him by the system.

**Diagnosing errors in recognition of words in context:** The French language is described by a phonic system and a graphic system. The regularities in the phonographic system are very significant contrary to English.

The children have their own system of rules of production to learn how to read and write. They use heuristics and strategies to acquire these rules and to use them. In a didactic situation 'recognition of words in a context', we presented a text (which has been just read by the system) to the child while asking him to identify in the text the word 'baleine' (Fig. 1).

It is only in the third test that it gave the good answer. In first test he clicks the word 'bouche' and in the second on 'baignoire'. Thus it uses the rule "identification of the word by the first letter", thus the misconceptions were caused by the application of this rule. It recognizes the letter 'b', it used a graphic index to identify the word this characterizes a pre alphabetical strategy where the child uses visual indices for the

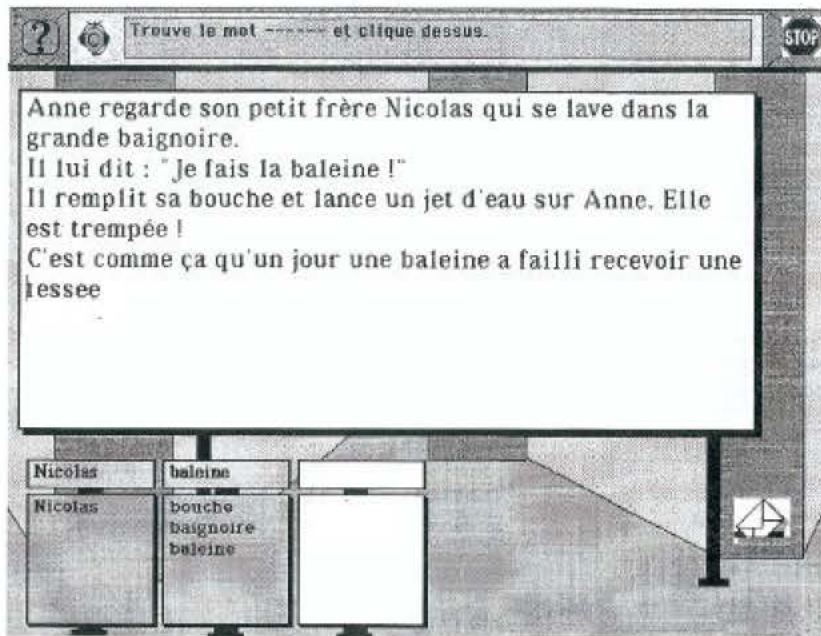


Fig. 1: Recognition of word in context

identification. It is a bad rule and must be corrected by an alphabetical strategy identified by the rule "reading of the whole word" what is revealing owing to the fact that the child carries out a work on the phonemes constituting the word.

The learning of the reading is the subject of passion debates in the various societies, it is characterized by individual variations. So that this training is effective, we are interested in the various errors that the pupil carries out in the various didactic situations. We have spirit to work on the diagnostic errors deduced from the various didactic situations retained in the project. In perspective we outline the design of an architecture multi-agents integrated into the AMICAL project which would make it possible to individualize the training and to analyse the errors of each learner how to follow its evolution.

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