

## Software Demonstration:

# Combining the Children's Dictionary *Addizionario* with a Multimedia Activity Book

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### Abstract

A CD is presented containing a hypermedia linguistic laboratory for six to fourteen year-old children studying Italian either as native or as foreign language. Two interrelated tools are integrated within the laboratory: "Addizionario", a computer dictionary written and illustrated by the children themselves, and a multimedia Activity Book linked to the dictionary. The Activity Book is a creative tool by which the child can construct his own personal dictionary, changing and tailoring to his needs the information imported from Addizionario, or adding new words and relevant definitions, examples, associations and drawings to the list of 1,000 words already present in the core dictionary.

This product is addressed to students, who can study language in a more pleasant and appealing manner; teachers, who can prepare specifically designed didactic units; and lexicographers, who wish to exploit the material produced by the children to create better and more attractive young learners' dictionaries.

## 1 Presentation of the product

In this paper we present a software implemented at the Institute for Computational Linguistics of CNR (National Research Council) in Pisa, in collaboration with the Department of Computer Sciences of Turin University. This product is a hypermedia linguistic laboratory to be used by children in the six to fourteen year range for the study of the Italian language at various levels of difficulty and from different points of view. The laboratory is made up of two interacting tools: "Addizionario", a computer dictionary for children, written and illustrated by the children themselves, and a multimedia Activity Bbook in which the child, working by himself or in collaboration with others, can create his own personal dictionary.

The idea of getting the child involved in the creation of a dictionary specific to his own needs derived from our reflection on the current state of children's lexicography. Although an essential didactic tool for language acquisition, the dictionary has not always managed to fulfil the requirements of the users.

With some exceptions, the products for young children available on the market seem to be abridged versions of adults' dictionaries, without taking in due consideration the tastes and interests of the young readers.

In a questionnaire in which they were asked to define their ideal dictionary, children listed attractive illustrations, colour, large characters, clean pages, clear and exhaustive, non-circular information as the most important features.

We feel that in Addizionario the above requests have been satisfied, and the modes of expression of the children respected as much as possible. The children have less difficulty in understanding the definitions contained in the dictionary and therefore use the product with greater pleasure and enthusiasm.

## **2 The Dictionary**

The core dictionary, which is for consultation only, contains an approximate 1,000 concrete and abstract nouns, verbs and adjectives, chosen according to usage frequency criteria, for which around 400 Italian children from the last three years of primary and first two years of junior high schools have provided their own definitions, examples, associations and drawings.

Apart from the most obvious spelling mistakes which have been removed, the material was maintained as much as possible in its original form, so as to respect the children's modes of expression, descriptions of family and school environment, presentation of everyday life and experiences.

Discovery of the linguistic universe of the child also enabled us to identify the most frequent errors or emerging meanings and uses of a word. For example, in Italian the word "cassetta" means both "crate" and "letter box", but when asked to produce definitions or examples of the word, the most common meaning assigned was that of "cassette" used for the tape-recorder or television.

In some cases the definitions, or examples, or drawings relevant to a word were incomplete. At an early stage of the project, it had been our idea to go back to the schools to ask the children who had collaborated in the initial phase of data collection to fill in those gaps. In the end, we thought that the activities of completion could instead be performed by the users of the product which, being incomplete, would motivate the student to consult the dictionary. An incomplete object certainly stimulates one's curiosity and interest more than a finished product!

## **3 Arrangement of the material**

All the material available in the look-up dictionary was arranged by us not only in alphabetical order but also in "worlds of words". These worlds are eighteen, and include that of animals, food, clothes, but also of emotions, and reflect different semantic areas, which do not always coincide with the categorizations of the children.

By using the Activity Book at his disposal, the child can "create" worlds which correspond to his personal ways of classifying reality, organizing his lexical knowledge in such a way that he can retrieve his own material easily when necessary.

The possibility of constructing special groupings of words can also be exploited during the lessons by the teacher, for example to help the child overcome particular spelling difficulties.

In Italian, for example, the word "acqua" (water) which is not easy to spell owing to the presence of the letter "c" between "a" and "q", can be practised again and again by asking the child to create the world relative to the word "acqua" and its derivatives. In this way, the spelling of the word "acqua" is unlikely to be mistaken in the future.

## **4 Activity Book**

The Activity Book is the authoring component of the laboratory linked to the core dictionary, but at the same time independent, where the child can work at the construction of his own

personal dictionary. He can perform both linguistic and non-linguistic activities, transporting into his Activity Book any of the material available in Addizionario (paradoxically, even copy all the contents!), tailoring it to his own needs.

For the linguistic activities, the system puts at the disposal of the child writing ambiences to produce the definition, examples, free associations, idiomatic expressions, synonyms and antonyms if they exist, as well as verbs and adjectives somehow associated with the word in question. He must answer questions of the type "What does it remind you of?", "How can it be?", "What can it do?", by which new nouns, adjectives, verbs can be added.

The non-textual activities concern drawings and sounds, which the child can produce personally or he can use the material already available in the archives of the system. Furthermore, the child himself can record the pronunciation of a word using his own voice, or assign a sound to an object or to its parts.

The drawings are one of the most stimulating aspects for the children, and a suitable site for making connections. These are particular links between words and drawings, useful not only for navigation, but also to encourage the child in the creation of new words. The drawings can be enlarged, reduced, or changed in colour, using the elements contained in the drawing ambience. These include different-sized pen-tips, colours, lines, circles, eraser, etc., which can help even the least skilled users.

Once all the information relevant to the newly introduced words has been completed, the child can take inspiration from the drawing, in order to write a story interacting with the drawing itself.

The various tasks should preferably be carried out at the presence of the teacher, acting as guide and supervisor, and directing the work of the children according to the types of activities involved. The children should work individually or collaborate together around the computer in small groups, on a give-and-take basis, where each individual in the group can benefit from the knowledge and experiences of the others. The children can create their own paths through the system, sharing them with their classmates.

Further information can be achieved from the solicitation or aid given by the teacher, who can plan varied programs of study in which each child can express himself at his best.

The Activity Book with its typical characteristics of interactivity, updating, multiple-access, etc., is an extremely appealing and flexible tool, easy-to-use, which can help the children participate eagerly in the various language activities. The child takes a lively interest in this tool where he is allowed freedom of action, and is encouraged to take the initiative. Acquisition and enrichment of vocabulary – often felt as tedious and boring – become pleasant tasks, able to grip the attention of the users.

## 5 Conclusions

Addizionario has been patented by CNR and distributed free of charge among teachers from numerous primary schools in Italy.

The tool is suitable not only for the acquisition or improvement of one's native, but also of a foreign language, or to improve knowledge in other fields such as natural sciences, history, geography, arts, etc.

Interest for the product has been shown by teachers, psychologists, and other specialists working with normal or with physically, intellectually or emotionally impaired children, customizing the product to the particular needs of the users.

The data produced by the children will be returned to our research group together with a feedback form containing useful information on the users, exploitations of the software, suggestions, problems, etc.

All this material, included in a multimedia database, will be made available for future research studies and, in particular, for the updating of Addizionario.

Furthermore, a pilot study is currently underway with the University of Cardiff, aimed at a comparative study highlighting the cultural differences between Italy and Great Britain.

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