



Software Application to Enhancing the Communication of the Children with Autism

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Abstract

The PECS is used to enhance and developing the communication of children with autism. In order to help these children to learn exchange with others and express their desire needs the classical PECS method uses paper images. Each image; represents an action, or an object. With these images the children with autism build a sentence. The traditional PECS method has two major inconveniences; first, the space needed to stock the picture cards and the second is the deterioration of the images after several uses. To resolve these inconveniences, we propose free computer software that allows children with autism to learn to communicate.

Key words

Software, PECS, autism

1 Introduction

Autism is a neurodevelopmental pathology that belongs to the Autism Spectrum Disorders (ASD) beginning before the age of 3 years. The ASD affects social interactions, communication, and the behavior. The prevalence of autism is currently about one for 150 births [1]. The major technique used method to help children with autism to learn to exchange with others is the Picture Exchange Communication System (PECS) [2]. The PECS is a visually-based communication technique, using images to build sentences. The advantage of PECS technique, it requires only a few basic knowledge. Several studies have proven the effectiveness of the PECS technique to enhance and develop communication of the children diagnosed with autism and increase their social interactions [3], [4]. The traditional PECS method has two major disadvantages; the first is the space needed to stock the picture cards and the second is the deterioration of paper cards after several uses. To resolve these inconveniences, we propose in this paper software that helps the children with autism to communicate with others.

2 Digital exchange system

This software has been developed with the framework PHP symfony2. The development of the software for learning communication by using images was developed in two steps. The first step is the design of the software interface (Figure 1). This software interface is composed of several categories. Each category represents a theme or activity such as school, games or a society necessity such as cleanliness or autonomy. When the child clicks on the icon of a category, the image corresponding to this category are displayed. For example, for the school category, the pictograms that will be displayed are: book, notebook, pen, schoolbag, ruler, eraser, pencil, etc. Thanks to these pictograms the child or the parent or educator can build his sentence in the space dedicated to this purpose. The second step is the build the database of pictograms.

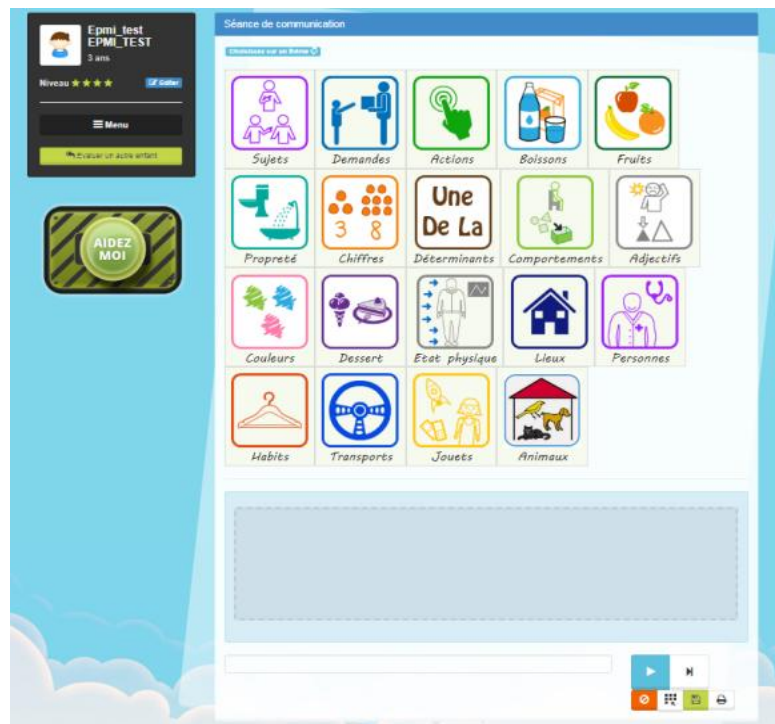


Figure 1: The software interface

3 Participants

This software is use by children with autism educated in the Institut Medico-Educatif 'le Clos du Parisis' in Paris. Fifteen children use this application; they are between 6 and 12 years old.

4 Conclusion

Children's use this digital application has had a positive effect on their ability to exchange with others. We also observed a positive effect on both children to understanding the sense of words and sentences. This computer application can be also used by school and by children with other mental disabilities.



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