

# ARASAAC: Communication pictographic system under Creative Commons License

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## ABSTRACT

In view of the communication barriers some people with different types of disabilities experience, the pictographic systems of communication, due to their easiness for implementation, universality and immediacy, become an alternative which allows these people to interact and modify their closest environment. During the last years, and in collaboration with the University of Zaragoza and some centres of Special Education in the community, different technical aids for communication have been developed alongside the pictographic systems.

Three tools emerged from that collaboration: TICO Project, Comunica Project and AraWord. TICO Project is an application to elaborate boards of interactive communication, Comunica Project consists of a set of tools to work with in Speech Therapy and AraWord is a Pictographic Text Processor.

The users of these applications, especially TICO users, demanded the possibility, once they were developed, to have them accompanied by images or pictures to make them more operative.

After a study and analysis of the existing systems, it was impossible to buy a license to introduce commercial symbols and / or pictograms due to the high cost and the loss of identity of the free software.

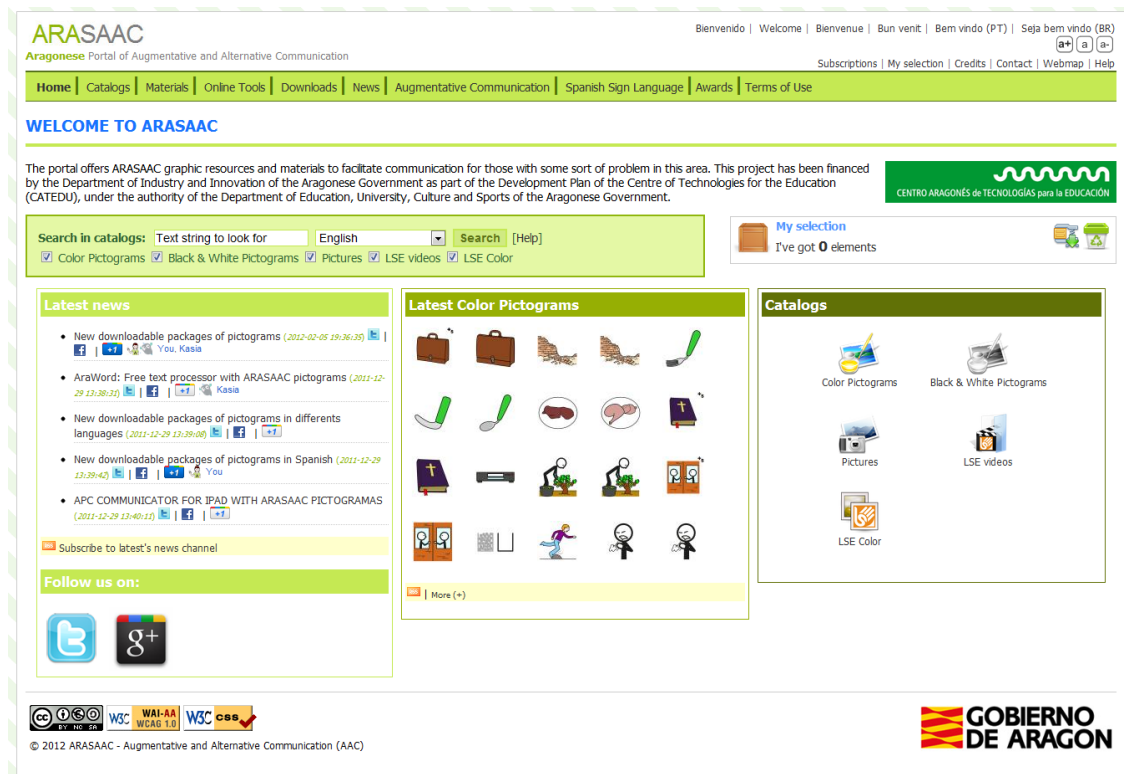
The Government of Aragon, from the very first moment, upheld the idea that communication had to be a right for all the people, regardless of their needs and possibilities. For that purpose, they decided to create a working group formed by the designer Sergio Palao, consultants from the Aragonese Centre of Technologies for Education (CATEDU <http://catedu.es>) and professionals from “Alborada” Special Education public school (<http://centros6.pntic.mec.es/cpee.alborada/>).

The objectives of the group were to create a semantic corpus for Special Education, to design the corresponding pictograms and to create a Portal in the web – ARASAAC (<http://arasaac.org>) - which allowed their free distribution.

Bearing in mind that communication is a universal right everyone should have access to on equal terms and without additional expense, the Government of Aragon established that all the resources offered by ARASAAC (pictograms, translations, images or videos) as well as the materials elaborated from them, had to be published under Creative Commons License, authorising their use for non-commercial aims provided that the source and author are mentioned and that they are shared under the same license. This implies that, any piece of work elaborated from the resources found in ARASAAC catalogs (pictograms, images or videos) must be distributed under the same Creative Commons license, and they must mention the author of the pictograms (Sergio Palao),

the origin of the materials (ARASAAC <http://arasaac.org>) and the license under which they are distributed (Creative Commons).

Once the initial task of elaborating the semantic corpus of about 1000 words for Special Education was finished, it was necessary to create a webpage which allowed to freely spread it. This is the origin of ARASAAC Portal (<http://arasaac.org>).



After 4 years, the portal ARASAAC has exponentially evolved and, at the moment, it's translated to five languages (English, French, Romanian, Portuguese and Brazilian Portuguese). It has passed all accessibility and usability tests and has the following resources:

- Spanish dictionary translated into 15 languages (English, French, Russian, Chinese, Polish, Portuguese, Romanian, Arabic, Bulgarian, Catalan,...).
- Catalogs (Color and Black and White Pictograms, LSE - pictures and videos - and realistic pictures)
- Spoken phrases in 13 languages.
- Packages to download pictograms in 10 languages.
- Six online tools to elaborate materials: Animations Maker, Symbols Creator, Phrase Maker, and Schedule, Calendar and Boards Generator.
- Catalog of materials: more than 8000 activities, generated and shared by professionals, families and users.
- Information related to Augmentative Communication.
- AAC Software: TICO, AraWord, Communica Project

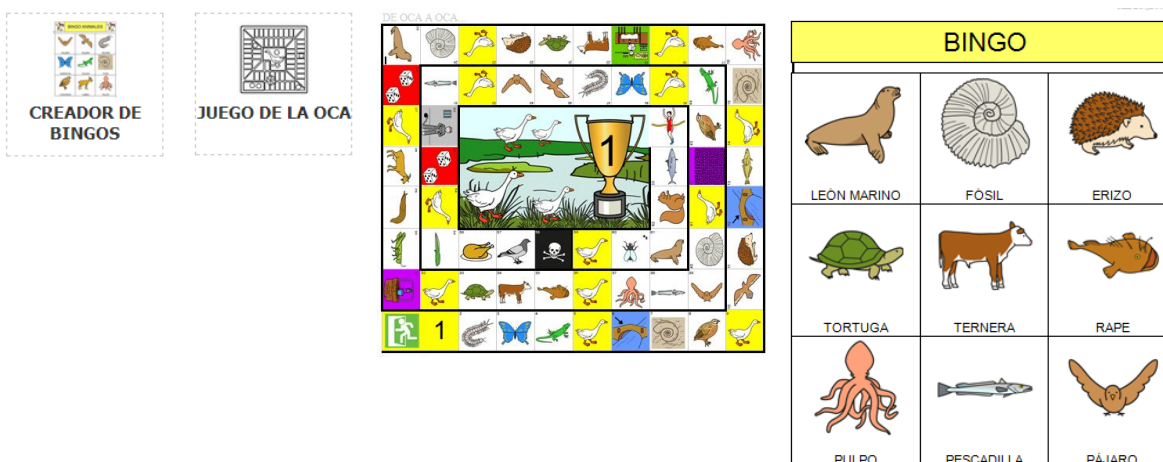
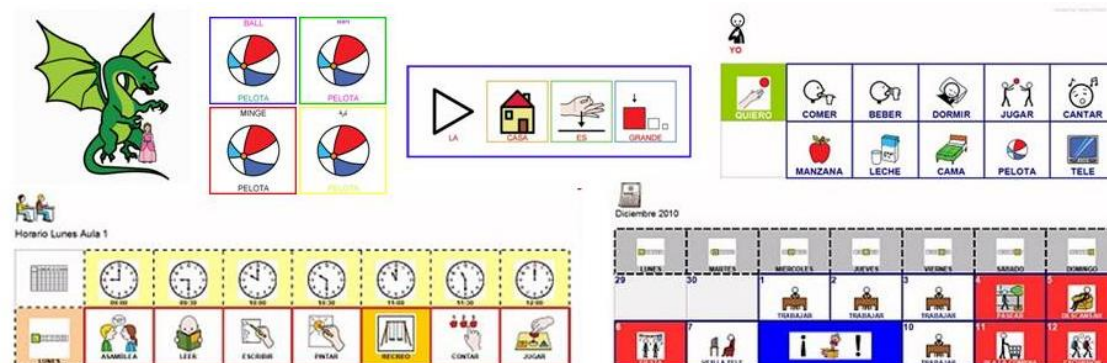
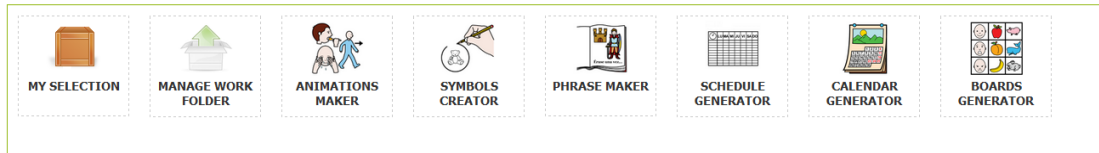
At the moment ARASAAC Portal has 5 catalogs. The most recognized catalog is the Color and Black & White Pictograms. It offers more than 14000 color pictograms and over 12000 black and white pictograms.

Although ARASAAC didn't originally emerge as a pictographic system of communication but as a compilation of graphic resources, the success of the pictograms among users keeps the Portal growing and becoming a communication pictographic system able to represent all parts of the sentence and with its own idiosyncrasy.

**ARASAAC** is a language with its own idiosyncrasy.



To facilitate the elaboration of materials related to communication, the portal eight tools: Animations Maker, Symbols Creator, Phrase Maker, and Schedule, Calendar, Boards Generator, Bingo generator and “snakes and ladders” generator.



The “Schedule Generator” becomes of special interest to work with autism as, apart from allowing us to generate schedules, it facilitates the creation of routines.

Related to Pictograms and methodology in Autism Spectrum Disorders (ASD) we could highlight that people with Autism Spectrum Disorders especially benefit from the visual channel, which becomes their preferred means to obtain information of the environment. We could say that it's their strong point and, as such, we should make the most of it. This visual channel has traditionally been used for the intervention with people with Autism Spectrum Disorders by means of pictograms in different ways.

ARASAAC offers a complete pictographic communication system, resources and tools that allow the development of work methodologies and specific activities for the intervention with people with Autism Spectrum Disorders.

Specially we could use ARASAAC resources for:

- **Anticipation and planning:** ARASAAC pictograms can be used to create agendas of activities which help to structure the time and activities, foreseeing what will happen. For that purpose, as we mentioned before, the online schedule generator becomes of extreme usefulness.
- **Spatial Orientation:** The pictograms may also be used for the signposting of concrete places in the close environment of the person with ASD, making him or her cope with the context with more autonomy.
- **Functional Communication:** In many occasions people with ASD require an Alternative and/or Augmentative Communication System.
- **Behavioral intervention:** The catalogs of ARASAAC images and pictograms can be used by professionals to produce social stories which help people to understand what behavior is expected from them at each moment or to anticipate eventualities. All this helps the person with Autism Spectrum Disorders to improve his or her emotional and behavioral self-control skills.
- **Social understanding and tasks:** ARASAAC has a great amount of resources to deal with socio-emotional contents through the use of images that we can incorporate as a support to any activity in (emotional expressions, mentalist verbs, etc.). The use of pictograms allows the adaptation of textbooks and worksheets, eliminating the obstacles sometimes reading and writing mean and permitting not only an improvement in comprehension but also an increase in the integration of people with Autism Spectrum Disorders in the socio-educative environment.

Among the technological resources available to work with children with autism, we could highlight two applications of free software, whose objective is to facilitate functional communication: **TICO Project**, **AraWord** and **AraBoard**.

**TICO** is within the collaboration Project between the Computing and Systems Engineering Department of the University of Zaragoza and “Alborada” Special Education Public School. The main objective of this Project was the design and development of an application which facilitates the interaction and modification of the environment for people with severe disorders in oral communication.





**AraBoard** is a set of software tools designed for Alternative and Augmentative Communication aimed to support functional communication by providing pictures and pictograms to users with disabilities in this area (aphasia, autism, neurologic disorder, degenerative disease,...). Thanks to the versatility of these tools, AraBoard can be also used to easily create communication boards to simple habits or any other expected activity.

This project has been made by the engineer Marta García Azpiroz, under Javier Marco Rubio and Sandra Baldasarri supervision's, from Computing and Systems Engineering Department of the University of Zaragoza and Giga Affective Lab.

AraBoard is composed by two tools:

### **Araboard Constructor:**

This tool is used for creating and editing communication boards using ARASAAC pictogram collection or any other images and audio stored on the device.



### **AraBoard Player:**

This tool is used to execute the communication boards previously created with AraBoard Constructor.



In conclusion, ARASAAC has currently become an internationally acknowledged pictographic system which continues growing and developing. The freedom offered by Creative Commons license has allowed ARASAAC to appear in different spheres such as education, hospitals, care of the elderly, adaptation of documents, accessibility of mass media, accessible tourism or signposting. Furthermore, the Portal, translated to different languages offers a wide range of materials elaborated by professionals and some online tools and software which facilitate to any professional and person communicate and elaborate materials.