ABCD software

Autistic **B**ehavior &
Computer-based **D**idactic SW

Software Open Source a supporto
dell'apprendimento di bambini autistici.

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ABCD SW	GETTING STARTED

The manual is a guide for tutors and/or parents in the use of ABCD educational software designed according to ABA guidelines.

Project funded by:

NOTE 1:

In the course of the document all sample images are provided by the software system, so the distractors appear randomly, as does their positioning on the screen. The combination shown in each example may therefore not correspond to that obtained by the user at a given time.

NOTE 2:

The software described herein is a Web application; abnormalities may be detected in the flow of presentation of the components in the windows that comprise it. To eliminate these anomalies just use the Refresh button with the proper menu, usually located on the bar at the top of the browser window with which you opened the page, as shown in the following figure:

NOTE 3:

The software described herein is constantly being updated and since it is based on web technologies that use a browser-defined memory (cache) you should   delete that memory often so you always have fresh content. To do this simply select the icon of your browser (chrome) that looks like a screwdriver (at the top right on the toolbar), then click on Tools, and then click Clear Browsing Data.

Project ABCD SW: http://abcd.iit.cnr.it
For details regarding the software the reader can refer to the manual on the above site at:

http://abcd.iit.cnr.it/?q=node/6

CONTACTS
e-mail: abcd@iit.cnr.it

1. (Registration)

In order to access the software and customize it to suit your needs, you must first create an account, released to any Tutor/Parent who connects to the following address:
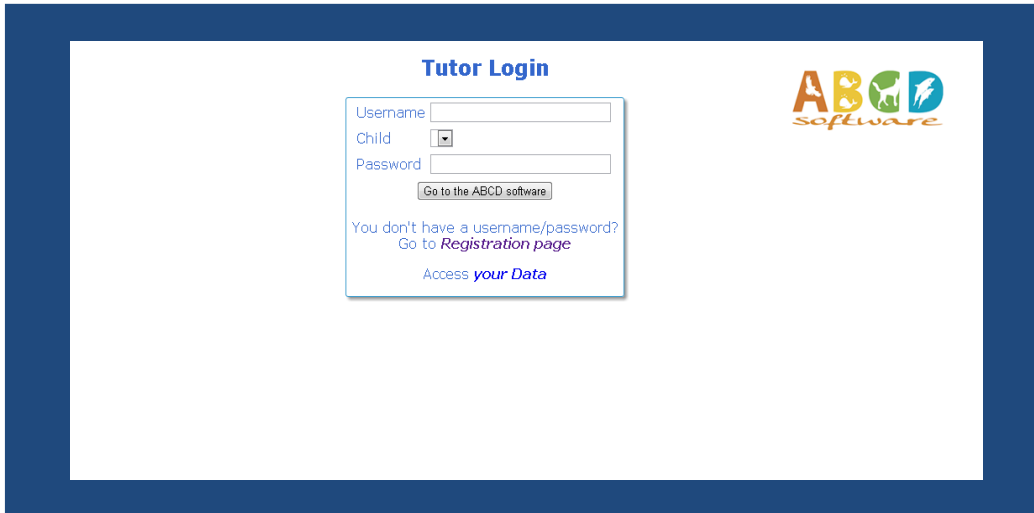
http://abcdsw.iit.cnr.it/abcdsw/user/register

The credentials chosen and registered are needed to enter the screen of the software, as described in Section 2. APPLICATION USAGE, and to configure the contents of the same software as described in Section 3. CONTENT MANAGEMENT.

2. USEOF THE APPLICATION

Login

With the PC go to the website: http://abcdsw.iit.cnr.it/ABCD/login_public.php

Fig. 1. Login window

- Insert credentials
- Enter application

Summary

- **The first window that opens presents a summary of the past sessions. From here you can:**

    View the details of various sessions by clicking the link of the individual session.

    Go directly to the application using the *Start Session* button.

Main window

The main page allows the tutor/parent to configure the session they want to carry out with the child:
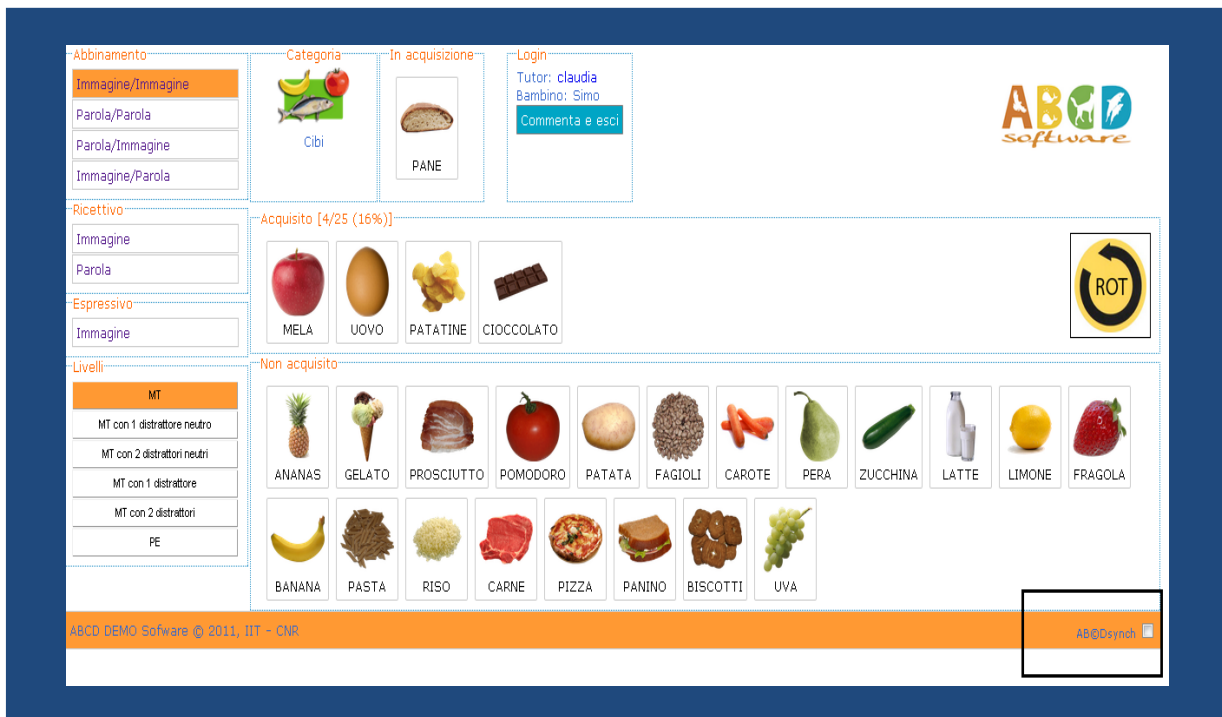
Fig. 2. Main window

Here are the main steps:
  You choose a category to work with and among the items that are offered you drag or double-click on the one you wish to work on; the chosen item will be placed "in acquisition."

  You choose a program from among those presented on the upper left. (pairing/receptive/expressive).

Carry out exercise

> **You must choose the mode of working from the following two:**
>
> **1. Working with a PC and a touch screen add-in (in wide screen mode) or having the child work in a window, created by the application and movable (by dragging) to the additional monitor. The tutor controls the software from the main PC. If you choose this mode, de-select the checkbox at the bottom right of the main page: AB © Dsynch (black square in the   figure)**

1. **Working with an Ipad, in this case the working window of the child will be made available on the iPad. In this condition, the tutor does not have to do anything in the main window, but must proceed to a preliminary operation as described below:**

   With the iPad connect to the following link:

   http://abcdsw.iit.cnr.it/ABCD/tutor_config_public.php

Record the page that opens by clicking on the icon of the Ipad mail in the browser of the device itself, after the one in the shape of open book, and the following:

• choose Add to Home Screen

• write a meaningful text, your name for example

• select Add

   Now on the home of your Ipad you will see an icon that can always be used to synchronize with a work session open on the PC. Every time you want to use the software it is preferable to enter by means of the icon of the Ipad only after having started the exercise.

   Note: The icon is associated with the Tutor; each Tutor must have his/her own icon to access the application, synchronizing with the current one on your PC.

Once a working method is chosen, start the exercise by selecting one of the proposed levels represented by the buttons on the box at the bottom left on the main page (MT, MT with neutral distractor, MT with 2 neutral distracters, etc.)

Only now will the child's exercise appear on the iPad; for example, if you chose the program Match -- Picture/Picture at *MT 1 level with neutral distractor* you will see at the bottom the article you have chosen, and above, the target article plus a distractor element; the child will have to drag the bottom item up to superimpose it over the one at the top.

At the same time a panel opens in the PC (hereafter called Tutor Panel, Fig. 3) displaying a table with various information. The panel is for the Tutor, mainly to help give an assessment of the child for the current session. For example, the first 5 rows indicate which key should be pressed on the numeric keypad (1 to 5) to save information on the database concerning the degree of prompt (help) provided to the child, or which key can be used to indicate the occurrence of errors and/or significant behaviors of the child. At the top of the Tutor Panel is a line containing information about what the child is being shown on the iPad, helping the tutor to better manage this screen as well.
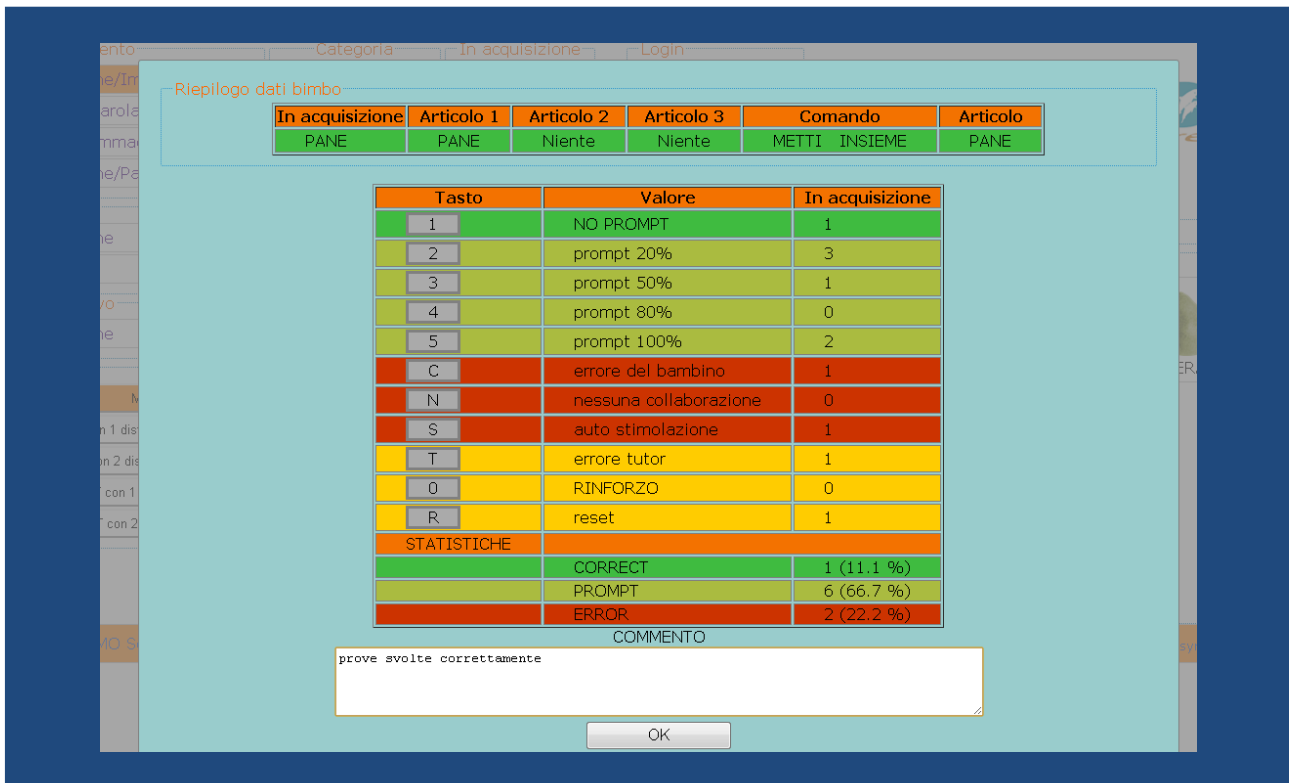
Riepilogo dati bimbo

In acquisizione	Articolo 1	Articolo 2	Articolo 3	Comando	Articolo
PANE	PANE	Niente	Niente	METTI INSIEME	PANE

Tasto	Valore	In acquisizione
1	NO PROMPT	1
2	prompt 20%	3
3	prompt 50%	1
4	prompt 80%	0
5	prompt 100%	2
C	errore del bambino	1
N	nessuna collaborazione	0
S	auto stimolazione	1
T	errore tutor	1
0	RINFORZO	0
R	reset	1
STATISTICHE		
	CORRECT	1 (11.1 %)
	PROMPT	6 (66.7 %)
	ERROR	2 (22.2 %)

COMMENTO

prove svolte correttamente

OK

Fig. 3. Tutor's control panel for inserting the evaluation

While the child perform the exercise on the iPad or the second screen, the tutor can press one of the buttons on his keyboard as suggested by the Tutor panel and at the same time can be up-to-date on the information that he or she uploaded by observing the statistics in real-time regarding errors and prompts provided to the child.
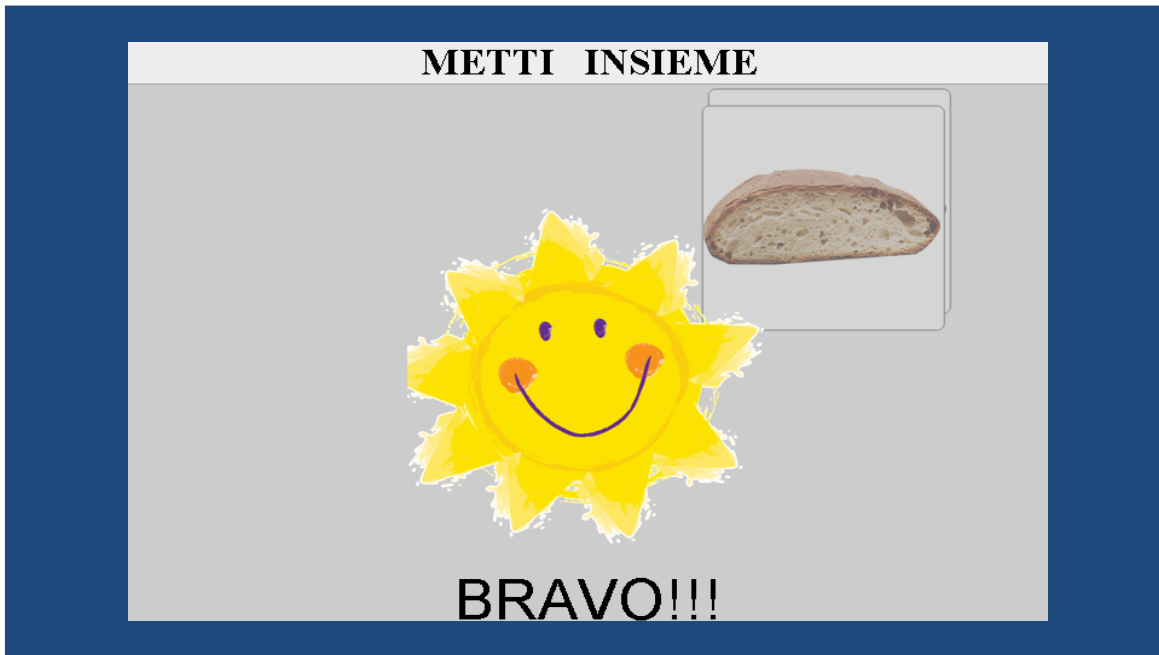
Fig. 4. Example of exercise displayed on iPad

Every time you press one of the suggested keys, the iPad screen is updated with a new configuration of the articles or a different placement of the same items, or you trigger other events associated with the specific button.

Details on Tutor Panel
Information on the type of Prompt (help) provided to the child

• **1 (keyboard) if tutor has not provided prompt to the child**
• **2 (keyboard) if tutor has supplied a prompt at 20%**
• **3 (keyboard) if tutor has supplied a prompt at 50%**
• **4 (keyboard) if tutor has supplied a prompt at 80%**
• **5 (keyboard) if the prompt provided was complete and therefore equal to 100%.**

Information on Errors

In the case of a well-defined error the Tutor will use:

• **C button to report an error by the child**

• **N button to report an error due to lack of cooperation by the child**

• **S key to indicate the presence of self-stimulatory gestures**

• **T key if an error was made by the Tutor**

The **S key**

The S key is used to indicate the occurrence of <u>self-stimulatory</u> behaviors by the child; in this case it activates an update of the child's workscreen, returning the situation to its original state or re-proposing the same exercise to the child (same distracters, same position).

<u>Reinforcement</u>
Using numeric key 0 (zero), the Tutor will be able to bring up a multimedia page in the child's window that can serve as reinforcement. <u>To exit the</u> <u>Reinforcement modality merely press the same numeric key 0 again.</u> Reinforcements to be included in the application can be customized according to the needs/preferences of each child; the system sets up 3 basic ones shown in random order. If you want to change the basic ones and/or add others more to your liking, follow the instructions in Appendix B of this manual.

<u>Configuration change</u>

With the R button the Tutor can change the configuration of elements arranged on the screen (child's work table) if he/she considers the system's (random) proposal unsuitable.

<u>Statistics</u>
The Statistics section (orange line in the Tutor panel in Fig. 9) shows in real time the number of hits, the number of prompts and the number of errors the child has received/made in the current trial. The number of successes indicates the number of tests carried out successfully by the child independently (i.e., without help), thus the sum of those measured/indicated with key 1.

The *number of prompts* displays the number of prompts provided, thus the sum of the values for keys 2-5.

The *number of errors* indicates the number of errors made by the child, thus the sum of those listed with keys C, N, and S.

Note: The panel of the Tutor has interactive features, so if the Tutor accesses the application with a Touch Screen the data described can be entered directly from the panel by clicking on the buttons edged in gray.

Mastering an article

After doing a number of tests, the Tutor can choose to move to the next level and following the specifications of the ABA method decide whether to declare a certain article in a specific program mastered (the child may have mastered an item as a picture but not as a text label).

To declare an item acquired (mastered) use the appropriate button *Mastered* present in the Tutor Panel. The presence or absence of the button is linked to certain conditions and facilitates the work of the Tutor in the decision made regarding the article; this is why the key is not present in the first 2 levels of each program, but only appears in the third level and in most cases only from the last level.

Finishing a level

To exit a certain level just click the Ok button on the Tutor Panel and go back to the main screen, from which you can choose to start another level, or change the program, possibly changing categories and articles.

Ending a Session

When you feel you have finished the session just use the *Comment and exit*[?]button, leading to a summary page of all programs carried out and showing the last level performed for each program; here it is possible make comments on the work that can be helpful for the next Tutor, or for the same tutor, for future sessions.

Fig. 5. "End Session" window

NOTE

Note 1

During registration the Tutor will be asked to enter the essential data of the child/children associated with him/her, including whether the child is *Receptive and/or Verbal*; in fact, the software <mark>will modify its actions</mark> adapting to the characteristics of the individual child. For example in the case of a Receptive and Verbal child, instructions for the various programs will not be visible in text form to the child, so like the Expressive program it will take place on only one level (MT) rather than all those levels provided for by ABA guidelines. Instead a child that is *Not Receptive and Verbal* will address the Receptive program also receiving in input the written instruction (e.g., "Touch the bread") but being Verbal, can carry out the Expressive program completing only one level (MT) passing immediately to the Extended Tests (PE) and Rotation (ROT).

Note 2

The levels proposed by the system vary according to the type of program, the characteristics of the child and of the number of articles already acquired in a certain category, and in a given program.

At any time the Tutor has the maximum freedom to choose the level; however, he/she will see a warning window, like the one shown below, in case his choice is not consistent with the correct sequence suggested by ABA guidelines. In fact, the order in which the level buttons are placed on the Tutor's workscreen reflect the correct progression according to the original ABA programming. If one intends to proceed in a different order anyway, merely confirm it by clicking "OK" on the warning dialog box.
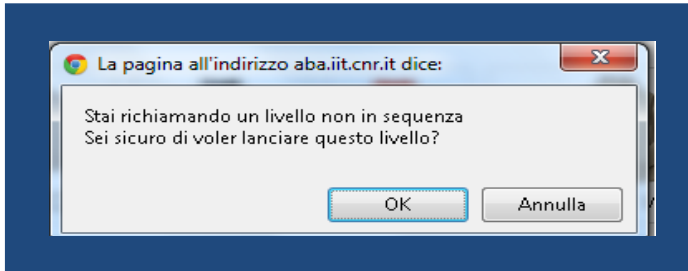
Example of a warning dialog at level change

KEYS USED IN THE APPLICATION

CODE	MEANING
1	NO PROMPT
2	Prompt 20%
3	Prompt 50%
4	Prompt 80%
5	Prompt 100%
C	Child error
N	No collaboration
S	Self-stimulation
T	Tutor error
0	Reinforcement
R	Reset
P	Behavior Problem
D	Discriminatory stimulation
B	Good (smile)

Acronyms and codes used in the application and/or manual

[you wrote "distruttore" but I assume you meant distractor?? –A.]

CODE	MEANING
MT	Mass Trial
PE	Extended test
ROT	Rotation
MT+Dn	Mass Trial with neutral distractor
MT+2Dn	Mass Trial with two neutral distractors
MT+D	Mass Trial with one distractor (non-neutral)
MT+2D	Mass Trial with two distractors (non-neutral)
Abb.	Matching (program)
Ric.	Receptive
Esp.	Expressive