VIDEOS

BETA

VIDEOS   BETA

My videos

Pedagogical guide for use with people with autism and/or
intellectual disability

VNIVERSITAT ID VALÈNCIA
Grupo de Autismo y Dificultades de Aprendizaje
Institut de Robòtica

Fundación Orange
orange

Index

Who is the VIDEOS application for?

VIDEOS has been created especially for people with autism spectrum disorders and/or intellectual disability. However, it may be useful for any person with special needs who finds it difficult to use conventional cameras or video players.

In this guide we use the term "user" to refer to the person with special needs for whom the application is intended. Similarly, the term "tutor" refers to the professionals, family members or friends who undertake the role of preparing PHOTOS for use by the person with special needs. There is a Manual called "Guide to the Tutor Application" which is explains the setup process. This manual can be downloaded from the AZAHAR website.

■ What is the VIDEOS application?

VIDEOS has a dual purpose. On one hand, it can be used for recording videos using the camera on the device on which AZAHAR has been installed; on the other, it allows access to videos which have been recorded and/or a list of favorites added to the application – for example the user's favorite video clips.

There are different ways of accessing the application, depending on the level of complexity the tutor wishes to adapt to the user's needs. For example, desktop icons to videos can be placed on the AZAHAR main screen, or more complex options for recording videos, deciding whether or not to save them, or selecting videos from a list. In addition to the examples given here, there a many other options open to the tutor depending on the needs of each user. Later in this manual we will take a closer look at the different configuration options.

● **Autism Spectrum Disorders:**

Autism Spectrum Disorders (ASD) is a relatively recent term used to describe people with a series of characteristics in common. These characteristics are known as the "triad of impairments" [1]. These people are affected in their ability to [2]:

1. Communicate verbally and non-verbally.
2. Interpret the behavior of others and build relationships.
3. Think and behave in a flexible manner, for example, to adapt their behavior to specific situations.

People with autism can be extremely different in terms of their abilities and their strong and weak points. Asperger's Syndrome, High-Functioning Autism, Classic Autism and Kanner's Syndrome are considered to be sub-groups of Autism Spectrum Disorders [3].

People with a wide range of abilities may have an Autism Spectrum Disorder, and this may occur in conjunction with other disorders (for example, sensory disability, intellectual disabilities, Down's Syndrome, ADHD – Attention Deficit Hyperactivity Disorder – or language difficulties).

• Videos for people with autism

A large proportion of people with autism are visual thinkers. This means that they find it difficult to understand things which cannot be thought of as images. Temple Grandin, a woman with autism, wrote [4] "*I think in pictures. Words are like a second language to me.*" People with autism "*find it difficult to learn things which they can´t conceive in pictures.*"

In her book, Temple Grandin writes an interesting comment which reveals how important images and videos are for people with autism. *"Unlike those of most people, my thoughts move from video like, specific images to generalization and concepts… It's as if I have a card catalog…, which continually grows as I add more examples to my video library".*

There are also educational experiences which show the importance of the use of video with people with autism [5]. A clear example of this is the "video modeling" procedure, a teaching technique which adds models to its procedure. A person watches a demonstration video and then imitates what has been shown.

Thanks to personal stories and educational experiences, such as the above examples and others not mentioned here, it has been observed that videos are a highly enriching element for people with autism. In this way, it is perfectly justified to provide this group of people, in the most autonomous and accessible way possible, with an application to allow them to record and play back their own videos. The purpose is to offer people with autism and other special needs, the chance to take control of the audiovisual media using technology.

Purposes of the VIDEO application

Playing and recording videos can meet a number of different purposes:

- For leisure and free time:

  - Watching favorite videos, for example, cartoons or animated shorts during a break, for relaxation purposes or entertainment.

  - Recording videos of experiences the user wants to remember, for example, a birthday party or other enjoyable experiences.

  - Sharing leisure time with friends or others, watching favorite videos, etc. This also meets a social purpose for interaction with others.

  - Making waiting periods more bearable. For example "I can watch my favorite video while I'm waiting to go out".

- For educational purposes:

  - Recording videos to serve as guides or reminders of how to complete a specific task, for example, a video showing how to wash one's hands, so that the person can watch it each time he/she has to complete this task.

  - Using videos as a model for learning communication, social and play skills. This consists of recording videos showing certain behavior or skills which we aim to help

the person with autism to develop, and the video can then serve as a model for helping the person to learn. Research has been completed on this educational technique[1] [5] [6] [7]. The advantage of the VIDEOS application is that the user can play an active role in both recording and playing the videos in question.

• As a reward after a less appealing activity. For example, watching a favorite video clip after completing a domestic chore which he/she finds de-motivating.

• As a reward for good behavior. For example, "You've finished all your tasks, now you can watch your favorite video".

• [1] 'Video modelling' has been used in a number of research activities with a view to teaching conversational skills in children with autism (Charlop and Milstein, 1989) [6], increasing the number of remarks made by children with this disorder to their siblings during play (Taylor, Levin and Jasper, 1999) [7], and acquiring motor skill and verbal responses and during play in pre-school children with autism. (D' Ateno, P and Mangiapanello, 2003) [5].

■ The VIDEOS application

Today, above all with the advent of new devices fitted with cameras and video players, we are accustomed to recording and playing videos on a regular basis. However, many people with autism and/or other special needs do not have their own cameras or find it difficult to operate them, or simply cannot grasp the concept – often rather complex – of playing back a video.

VIDEOS is especially designed to facilitate this process. The key lies in adapting the level of difficulty of accessing a video or making a recording to the level of development of the user. In this way, VIDEOS allows the following actions to be completed, ordered from lesser to greater complexity for the user:

- The simplest option for operating the application consists of directly accessing it via one or more shortcut icons on the Azahar main screen. An example may be for the main screen to contain the image of a video camera, and the user can press this icon for direct access to the camera on the device, thus recording a video. As further options once inside the recording application, the tutor can choose whether the user is asked to save the video or not. Even more simple is a shortcut using an image for playing back a video, for example, a short clip of the person's favorite cartoons. When a video is played, the tutor can choose whether or not to include operational buttons, i.e. play, pause and stop.

  The tutor can add as many shortcuts on the main screen as desired, bearing in mind that it's important for the user to learn how to use them gradually.

- An intermediate option consists in having a shortcut to a list of different videos, obtaining an icon as a shortcut to allow the user direct access to the video camera.

- The most complex option consists of using the video camera icon, and then choosing between recording a video, accessing a list of videos or watch recorded videos, if the tutor has set it up that way.

These three options are example of how the application can be adapted. However, it is important to consider that there are many different possible combinations, and the tutor should adapt these options according to the user's needs.

The complexity of using AZAHAR can be increased gradually as the user becomes more familiar with the application. For example, at first you can use shortcuts for direct access to play videos from the main screen, later moving on to add greater variety with a list for the user to choose.

As with other Azahar applications, in order to configure VIDEOS, the tutor must bear in mind the level of understanding and operative skills of the user. In this way, if the user has not learnt to handle categories or understand a sequence of several steps, it may not appropriate to start out offering the possibility of choosing between recording a video or choosing a video from a list. In these cases it may be more appropriate to use a shortcut image for the user to record a video directly or play a specific clip, without having to go through any previous stages or having to make a choice.

All Azahar applications are highly customizable, and VIDEOS in particular (like other applications such as PHOTOS) has the advantage of being easily adapted to the user, as there are not as many customized options as in the other applications (HELLO, PERSONAL GUIDE, etc.).

- **Recording videos**

In order to record videos the computer in use must have a webcam connected. It is advisable to use a camera with a relatively long cable to allow more freedom of movement.

The tutor needs to choose the pictogram or image to represent the action of taking a recording a video. Remember that the application has its own recommended image for this purpose.

From the user's point of view, accessing recording a video can be set up with one or two steps: the simplest process consists of choosing to record a video using an icon on the main screen.
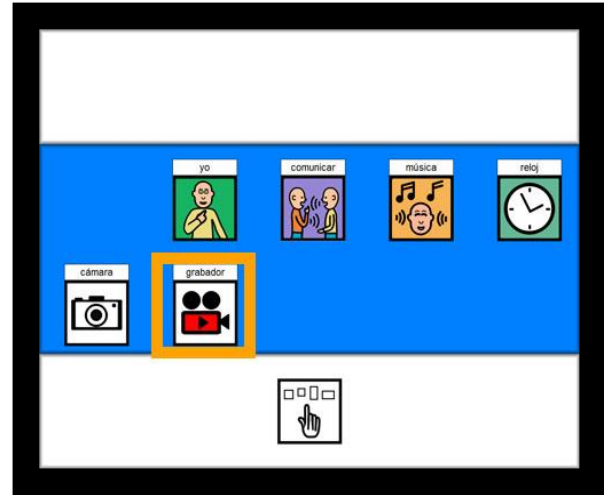
The more complex option consists of using the picture of a camera on the main screen and then choosing to record a video from among other options.
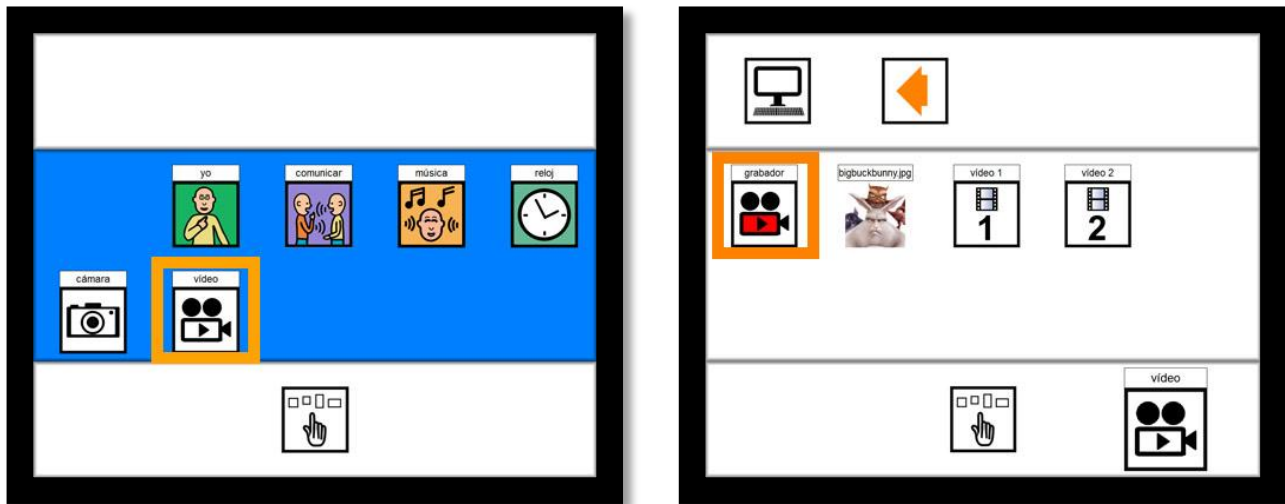
When the user selects the camera, he/she will see what can be recorded on the screen, depending where the camera is pointing. Then all he/she needs to do is press the record button to start recording and then the stop button to end the recording. One advantage of the VIDEOS application is that, unlike cameras on other kinds of mobile devices, there are no additional buttons available when recording a video, making it impossible to access other screens by mistake or getting distracted by other options.

• Saving options

The tutor can choose whether the device is to ask the user whether or not he/she wants to save the video he/she has recorded. If this option is activated, when the user finishes recording, a written question will appear asking whether he/she wants to save the video, with two possible options, "yes" or "no". If the tutor chooses not to activate this option for the user, the video recording will be saved automatically.

The tutor has the option of deleting the videos recording via AZAHAR from the Tutor application. In order to do this, select the video you want to remove under the "Videos" tab, and press the "delete" button. If what you want is for the video not to appear on the application, but without deleting it, go to the menu tab of the application, select the video and press "hide".   In this way, the video is still under the "Videos" tab, and can be added to the application at a later stage if desired.

• Playing videos

The tutor needs to choose the pictogram or image to represent a video or the action of consulting a list of videos. Ideally, the image representing each video should be added by the tutor, and reflect as closely as possible the video in question, for example, if it is a Simpsons video, the image for accessing the clip should be a Simpsons picture.

15

lista vídeos

In the case of the list of videos, AZAHAR recommends an image, which can be changed by the tutor if desired.

From the user's point of view, accessing recording a video can be set up with one or two steps:

- the simplest option consists of accessing the video directly from the main screen.

- The two step option has two alternatives:

  • using an image representing the application to access a list of videos to choose from.

  • Using the image of a camera to access the application from the main screen, and then choosing between recording or a list of videos. The list contains the different videos which can be seen.
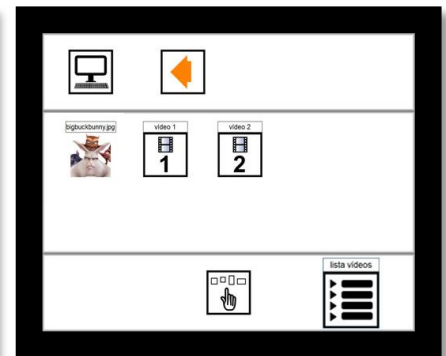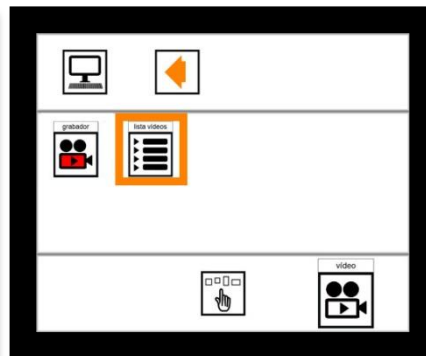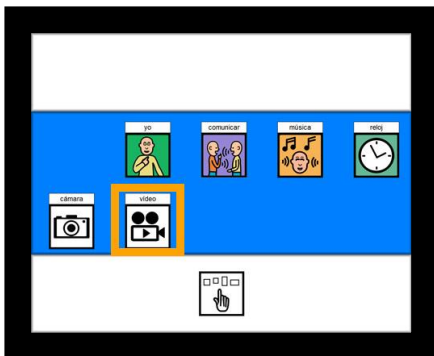
• Video player options

The application comes with a series of visual elements to aid comprehension during the video playback and make the player easier to use. These options are:

- Playback bar: this is a bar or timeline which shows what point the video is at in terms of its total duration. This helps the user to understand, in a relative way, the duration and current point of the video.

- Play, pause and stop buttons. These allow the user to play, pause or stop the video.

The options for viewing the video can be added or not, as the tutor sees fit, depending on the needs of the user. Where the play, pause and stop are not included, the video will play automatically when accessed, and will close automatically when the user touches the screen or when the clip comes to an end. The tutor must take special care to ensure that the user does not press the screen if he/she does not want the video to close automatically.

■ Pedagogical Recommendations

The main purpose of the VIDEOS application is for use during leisure and free time for the person with special needs, although as mentioned above, it can also be used for educational purposes. In addition, there are a number of pedagogical recommendation which may be useful to facilitate the use of the application.

Although VIDEOS is easy to use in the case of playing videos, the use of the recording function is more complex, as the procedure for recording a video requires the user to have certain skills. These skills range from understanding that what appears on the screen reflects a real image, to understanding how to use the "record" and "stop" buttons in order to record a video. It is also important to bear in mind the complexity of understanding the procedures of having a webcam connected to the computer, handling camera movement and pointing the camera towards the object or scene to be recorded.

We therefore have a selection of recommendations which may facilitate this process.

● Procedure for recording a video

In order to check whether the user understands the procedure involved in recording a video, the tutor or another person close to the user can first record a video and then show it to him/her. It is advisable to check that the person understand that the video reflects a real image of

something this has just happened, and it is therefore important to play the video immediately after it has been recorded. In order to reinforce this process, it may be useful to describe the video in detail, describe the process followed and record simple clips which do not require too much camera movement. For example, if the video is taken of the person's surroundings, such as his/her bedroom, you can say, "look, this is your bedroom; here you have your shelves, your notebooks, your bed..etc." while both are standing in the room, without changing location. This procedure can be completed for a number of different videos and settings, gradually increasing the complexity of the videos, adding more movement, or for example recording different areas of a room, the bathroom, the kitchen, etc.

The user can then begin to use the camera, with support from the tutor or another person if necessary, recording and then viewing a video. It is important for the person to see the result of what he/she has done, i.e. viewing the video he/she has recorded, and also that he/she can observe what is happening on the screen as the video is recorded.

- ## Camera movement and direction

For some people with special needs, it may be difficult to use the camera due to the movements required in order to record a video. In addition to the above recommendations for demonstrating how to record a video, it is therefore advisable to complete an initial phase of modeling user movements with the camera. In other words, the tutor guides the user's hands while holding the camera, with gentle movements at first, pointing in just one direction, allowing the user to experiment and understand the process. It is also important not to record videos with sudden or jerking movements. It is important for the camera to point and objects or scenes which

are relatively close, to aid the user's comprehension of what is being recorded. This manual guidance can then gradually be withdrawn. In some cases it may be necessary to provide manual assistance to a user for a longer period of time, whereas others may be able to use the camera on their own.

In addition to these basic recommendations for recording videos, there are a number of pedagogical recommendations relating to this application, as follows:

- **Encouraging the person to use VIDEOS**

The VIDEOS application in itself is highly motivating for any person and in particular for those with autism, who for the most part are "visual thinkers"[2]. However, here are some guidelines for how to encourage users to engage with the application.

One of the ways of motivating a person with special needs to use the application is to watch videos which he/she finds particularly attractive. For example, the tutor can add his/her favorite cartoons, short animated films, music videos or any other video clip which motivates the user. It is also possible to record his/her favorite objects in order to be able to see them when they are not within reach. From a viewing or playing perspective, in principle it is advisable to start out with just one video, and gradually increase the number of videos available for playback. When a number of videos have been added, it is advisable to classify them into lists, for example, cartoons, video clips, etc, using an appropriate image to represent this concept. This categorization can be used from the beginning if considered necessary. Preferably, each video that can be accessed by the user should be represented by an easily recognizable image, for example, a music video can be represented by a photograph of the singer in question.

In the case of the video recorder, an aspect which can motivate the user to engage with the application might be to record videos of the objects or scenes which the user enjoys the most. For example, if the user loves the fairground, a good starting point could be to record a video of

---

[2] The term "visual thinkers" is used by Temple Grandin to describe how people with autism have a marked tendency to thing in pictures (4). This topic has been discussed earlier in this guide.

the fair, or his/her favorite attractions. In this way, the person will take an interest in the video, and possibly in the process of recording. The tutor can use the TUTOR application to add an image to represent this video. In order to do this, the PHOTOS application can be used to take a photograph to be added to represent the video, for example, in the previous example of the fairground, this video can be represented using a photograph taken at the amusement park.

- **Continuous repetition of specific videos**

Some people with special needs, and in particular those with autism and/or intellectual disability, tend towards the continuous repetition of the same stimulus or activity, and this can therefore be transferred to the continuous repetition of a particular video. Although this behavior may be relatively typical in many people without disabilities, for example, watching a "feel good" video over and over again; in the case of some users, this repetition may pose a problem when it becomes almost obsessive. It is important to consider that one of the difficulties associated with autism is[3] the tendency to restrict choices to a single interest, and when applied to the context in hand, this may manifest itself in a tendency to watch a single video repeatedly, making it even more difficult to expand the person's interests. We must consider that many people with autism and/or intellectual disability have not had the chance to explore and investigate different options

[3] Let us remember, as already indicated earlier in this guide, that one of the difficulties encountered in people with autism is thinking and behaving in a flexible manner. This may, for example, mean that the person is reluctant to watch to a video he/she has never heard before, or always wants to listen to the same video over and over again.

within the audiovisual media. For this very reason, it is important to offer the opportunity to widen their preferences. We believe that these restricted interests are difficult for autistic people to regulate. In order to do this, the tutor can use strategies such as the following:

- Temporary withdrawal of access to the video. The tutor can add the video again at a later stage if considered appropriate.

- Changing the videos which can be played using the application. The tutor can create different sets of videos in the TUTOR application and alternate them on a regular basis. These may be the user's preferred videos, or others which he/she may enjoy, in the view of the people closest to him/her.

- Expanding interest in videos using other audiovisual media (television, videos, internet…). For example, the tutor may use the internet with the person, and research videos which may be of interest. In this way, if the person is seen to show interest in specific videos, these can be added to the application.

● Selection of videos based on user preferences

It is important to select videos for adding to the application in line with the preferences and tastes of the person who is due to use it. In order to do this, an assessment can be completed by those who know the person's preferences and needs. We have drawn up a template to aid this process which may be of use to the tutor for drawing up a list of videos for adding to the application. The template specifies aspects of interest such as the objective in question, when and who is going to use the application, etc.

Template: table for list of videos

When should it be used? Before completing the list of videos.

It is advisable to repeat the assessment on a number of occasions in order to obtain the most reliable results possible. The template should be updated regularly, as the user's tastes may change over time. It is important to remember that people with autism and/or intellectual disability can lose interest in a video (just like any other person) if they hear it over and over again (even bearing in mind the limited interests shown).

Who should complete it?

The people who work with and/or are closest to the person with special needs. If several people are due to complete the assessment, each one will complete separate tables. The results are then examined to take all these tables into account.

What are the results used for?

One responsible person, or by way of a meeting between all those who have completed tables, will draw conclusions based on the results obtained.

The highest scores will determine which videos form part of the list. The videos repeated the most over the course of the different assessments will be those taken to be "preferred videos".

NB:

This assessment includes a "neutral" score, where this reflects the reaction of the person upon listening to a certain station. The videos scored as neutral can be re-assessed at a later stage in order to confirm whether the person finds them preferable or not.

The purpose of this assessment is to provide the person with the chance to discover new videos and expand his/her interests.

Name of the person who will use VIDEOS…………………………………………………………… ......

Assessor……

Video title, topic or content	Score					How this is shown
	Not at all	Neutral	A little	Quite a lot	A lot	

	1	2	3	4	5	
	1	2	3	4	5	
	1	2	3	4	5	
	1	2	3	4	5	

Finally, we must set our sights on the objective of the person using VIDEOS having access to an increasingly broad variety of videos. If we put ourselves in his/her position, we can see how our multimedia options would be extremely limited if condensed into just a handful of videos. However, we are now becoming used to watching hundreds of different videos each month (YouTube, digital television, etc.) and it would be hugely limiting to find ourselves restricted to just a few of these. Despite starting out with a small number of videos in order to facilitate the learning process, we should continuously broaden the variety, allowing the person to access as many different videos as he/she is capable of learning to manage.

■ Download and Installation

We have done our utmost to simplify the installation and preparation process for this tool. However, we are aware that for some professionals or family members who have less experience with modern technology, this process may seem complicated. In these cases it is highly recommended to obtain support from a friend or relative who is more familiar with the use of computers and other technological devices.

Detailed steps for installation can be found at: http://www.proyectoazahar.org

In order to record using the VIDEOS application, the computer must be connected to a webcam. The quality of the videos recorded will therefore depend on the quality of the camera used.

■ Bibliography

[1] Frost, L; Bondy, A (2002) T*he Picture Exchange Communication System (PECS) – Second Edition.* Pyramid Educational Products Inc.

[2] Orange Foundation, España Report 2009. http://www.fundacionorange.es/

[3] Jones, G; Jordan, R.; Morgan, H (2001) *All about Autistic Spectrum Disorders. Ed: The Mental Health Foundation*

[4] Grandin, T (1995,2006) *Thinking in pictures*. Ed: Alba. Barcelona.

[5] D' Ateno, P and Mangiapanello, K. (2003) *Using video modeling to teach complex play sequences to a preschooler with autism.* The Graduate Center, University of New York and Queens College, Nueva York. Bridget A. Taylor, Alpine Learning Group Journal of Positive Behavior Interventions 2003; 5; 5

[6] Charlop, M. H., & Milstein, J. P. (1989). *Teaching autistic children conversational speech using video modeling.* Journal of Applied Behavior Analysis*, 23* , 275-285.

[7] Taylor, B. M., Levin, L., & Jasper, S. (1999). Increasing play-related statements in children with autism toward their siblings: Effects of video modeling. Journal of Developmental and Physical Disabilities*, 11, 253-264.

■ Credits

Autism and Learning Difficulties Group.

Robotics Institute. University of Valencia

Software development	**Arturo Campos** **Ignacio Navarro** **Javier Sevilla** **Alejandro Morell**
Coordinator	**Javier Sevilla**
Pedagogical Design	**Gerardo Herrera** **Raquel Abellán** **Fabián Amati**
Graphic Design of Tool and Guide	**Carlos Pardo**
Guide Text	**Raquel Abellán**
Monitoring	**Orange Foundation**

www.proyectoazahar.org

Design and Development

Autism and Learning Difficulties Group.

Robotics Institute – University of Valencia

Sponsor

Associates

Autism Association of Ávila
Autism Association of Burgos

Supported by