

Title: *WHAAM: A new online service supporting parents and teachers of children with ADHD*

Authors:

Alves Silvia
Bamidis Panagiotis
Bilbow Andrea
Chiazzese Giuseppe
Chifari Antonella
Denaro Paola
Di Giuseppe Onofrio
Doherty Gavin
McGee Colin
Merlo Gianluca
Nikolaidou Maria
Sanches-Ferreira Manuela
Santos Miguel
Seta Luciano
Silveira-Maia Mónica
Spachos Dimitris

Editor: Antonella Chifari

Proofreaders: Colin McGee, Andrea Bilbow

Art director: Anastasia Kyriakidou

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WHAAM

A new online service
supporting parents and teachers
of children with ADHD

Thessaloniki 2015

ADHD in brief

Attention Deficit Hyperactivity Disorder (ADHD) is a neurobiological disorder characterised by symptoms of Inattention, Hyperactivity and Impulsivity. These symptoms can be present either as a combined type, which is more common, or in some cases predominantly one of the two main subtypes. It is one of the most common disorders in childhood and is not the result of poor parenting or educational discipline but a developmental disorder of self-regulation. This means, that the emotional developmental growth of a person with ADHD tends to lag behind the development of a neuro-typical person. On balance and the available evidence, the consensus seems to be that they may make considerable progress towards development of internalised speech and self-regulation but most remain symptomatic to a greater or lesser degree.

! Cognitive Behaviour Therapy (CBT) helps people in identifying their negative thoughts and in changing negative behaviour patterns. The emphasis is aimed directly at solving problems and initiating behavioural change.

General estimates of the occurrence rate of ADHD have changed over the years due to many factors that include changes in diagnostic approaches and improvements in measurement procedures. New research into coexisting conditions and extensions of the age of cohorts in epidemiological studies in scientific literature agree on a range from 2% to 9%, (including pre-school and school age children.) Recent studies have added a new dimension to this disability: it must not be classified/considered as a paediatric syndrome since its impact continues through adolescence and on into adulthood. This creates serious limitations in many different life contexts such as adult relationships, school performance and family and social relationships (Pelham, Foster, Robb, 2007).

The disorder affects not only the child but also the family, school and community in which they live. The main educational agencies, together health professionals (psychiatrists, psychologists, speech therapists, paediatricians etc.), have the fundamental task of taking care the child with ADHD while trying to find resources and strategies that are able to improve learning and the emotional wellbeing of the child.

In most cases evidence suggests that ADHD can be successfully treated using a multimodal approach, which combines medication, psycho-education and certain kinds of psychotherapy such as life coaching and behavioural-cognitive therapy (CBT). We believe that by working within a collaborative network of doctors, therapist, parents and teachers we create possibilities of finding effective approaches for meeting the children's needs. Sometimes, interventions that work successfully with one child may well not work with another child. We need to remain positive and not lose hope because there are many other different avenues for treatment!

! ADHD is a neurobiological condition due to a chemical imbalance in the brain. A low level of dopamine can cause the three primary symptoms of ADHD: inattention, impulsiveness, and hyperactivity.

What is WHAAM?

It is a project funded by the European Community in the LLP Transversal Programme: KA3 - ICT Multilateral Projects. The acronym WHAAM means Web Application for

ADHD Monitoring. The main outcome of the project is the development of a unique service that is described below.

! The Functional Behaviour Assessment (FBA) is a method of effectively gathering information about different situations or events to help identify underlying patterns that maintain problem behaviours. To obtain this information we use both indirect observations (i.e. school records, teacher interviews, and curriculum-based measure) and direct observations (classrooms, lessons, and playtimes). Generally, after the data has been collected, it is possible to develop an understanding about the possible functions of problematic behaviour and to create a baseline of their behaviour. We can then begin to test it by using an experimental functional analysis approach. We systematically manipulate elements of the setting in which most problem behaviours frequently occur. An intervention is executed and its effects are recorded and then evaluated. In most cases, evidence suggests that the introduction of a FBA based intervention successfully contributes to the decreasing frequency of a child's poor behaviour choices. This is possible because FBA links the assessment of behaviour problems to a choice of possible intervention by indicating possible strategies to reduce bad behaviour and increasing the desired or more acceptable alternative behaviour (O'Neill et al., 1997).

The **WHAAM network service** is available at <http://www.whaamproject.eu/> for creating a closed, safe network among parents, teachers and health professionals around your ADHD child. The service is aimed to:

- **Circulate** a better knowledge of the ADHD child's condition and use the most recent research from a network of theories, methods and ICT tools for the assessment, monitoring and intervention in the ADHD child's main life contexts of school, family and peer.
- **Offer** a web and mobile service to provide a more accurate behavioural observation practice both at school and home.
- **Stimulate** more effective interaction, co-operation and open sharing of data between parents, teachers and professionals.
- **Increase** the expertise of higher education students and health professionals by providing training courses to improve knowledge, skills and promote the use of ICT tools for supporting team activities in the field of behavioural management.

The web service brings together a shared and open source of intervention practices on common target behaviours built by therapist, the teachers and parents for the behavioural management of ADHD children. In this way it provides a comprehensive overview of the individual child, the functions of their problem behaviours and intervention strategies used within the closed network of supporting people.

! The key purpose of the project is to promote and facilitate the digital monitoring processes of all members (teachers, parents, health personnel) involved in the care process of ADHD pupils and young adults (age 7-18), to guide them in choosing the most suitable intervention strategies in the child's main problematic life contexts (school, home and peers).

The WHAAM service addresses a number of needs

In order to help children and teens with ADHD to succeed with both their learning and in their personal life settings we need precise teamwork between parents, teachers and health professionals. Common strategies and effective intervention plans are essential to overcome the daily challenges of a child or teen with this disorder.

As a parent you can use the WHAAM to satisfy the need to:

- Improve home-school communication by sharing common aims with teachers and other educators
- Be helped in getting full medical and psychological assistance to help recognise the core symptoms
- Receive prompt feedbacks from professionals about how things are for your child
- Monitor behavioural and cognitive issues that children show in their life contexts
- Find effective strategies to improve the child's emotional wellbeing
- Put into practice the strategies suggested by the network
- Measure the effect of behavioural plans applied at school or at home.

As a teacher or support educator you can use the WHAAM to satisfy your need to:

- Improve home-school communication, by sharing with parents valuable information about their child's specific learning and behavioural difficulties and suggesting effective ways to tackle behaviour at home
- To understand the core symptoms with the aim of adopting a new, more tailored approach to ADHD's specific challenges
- Receive up to date educational and informative guidelines from professionals about what ADHD is like for the child
- Monitor the behavioural and cognitive impairments that children show in the classroom
- Be shown suitable and effective educational strategies and accommodations to help facilitate the learning process

As a health professional you can use the WHAAM to satisfy your need to:

- Create a network of all the caregivers around your ADHD patients
- Enhance both the Functional Behavioural Assessment procedure and the single-case observation method
- Increase the involvement of teachers and parents in the creation and implementation of Behavioural Plans
- Have a reliable source of effective and non-effective behavioural interventions around specific problem behaviours for the child
- Improve the evidence-based evaluation process of your behavioural intervention
- Facilitate the collection of empirical and objective data such as frequency and duration of specific problematic behaviours
- Keep in touch with new developments and adaptations for other disorders

The WHAAM service provides

A service that is a well-tailored bundle of components that work together to achieve the previously described needs. These components aim to help improve the communication of all carers around the child who has ADHD. We believe that this will amplify the efficacy of the intervention. Follow the description of each component.

1. The WHAAM application

The WHAAM application (WA) is designed to help identify the function of problematic behaviours, to plan behavioural treatments and to statistically evaluate their effectiveness. It consists of two main parts: a web application and a mobile application.

The web application is accessible at the URL: <https://app.whaamproject.eu> and its purpose is mainly for monitoring, creating networks, collecting data, planning and evaluating interventions. The mobile application is usable on both iOS and Android devices and is dedicated to data collection while taking advantage of the smartphones specific characteristics. Smart phones are available almost everywhere and accessible. They are simple to use, easily available and they can increase flexibility while observing. They can also promote engagement, critical thinking, collaboration and communication between adults in the network. The mobile application is downloadable from Apple Store for the iOS version and from Google Play for the Android release.

The first phase in the use of the WA is the creation of a child's record. The WHAAM application protects the children's privacy and allows users to disclose as much or as little information about the child as they feel comfortable with. Only a few form fields are required to begin the process. It is possible to use the application simply by inserting a nickname, the gender and the date of birth. Protecting the safety of personal data is guaranteed through the use of authentication credential management procedures and the application of effective encryption techniques.

Additional optional information can be added in a section named "case data". This is aimed at collecting information about the child's diagnoses, medications, school information and other general events that may have been important in the child's life. This section is not intended to replace the personal health record system but to combine elements that can have an influence on the child's behaviour.

The second phase is adding a child's behaviour from a predefined list or to write a new description of the specific behaviour that users want to target. The WA support users in writing a description of the behaviour and provides them with examples and detailed directions of how to fill in the form fields correctly. The term "operational definition" means describing the child's behaviour in a systematic way so that the reader does not have to guess what it means. It also includes details about the place and the setting in which the behaviour occurs.

One of the main features of the WA is the network. As in the most popular social networks (i.e. Facebook, Google+, or LinkedIn) WA users can create a virtual network made up with people who are important to the ADHD child in their main life contexts (for instance home and school). This enables members of the network to share knowledge and relevant information about the child's behaviours between the network. As suggested by many researches, good clinical outcomes of the management of ADHD are obtained when communication between health professionals, teachers and the parents of children is improved. In general better communication between caregivers and experts in the treatment of ADHD brings more effective results.)

The network role is crucial to gain a good understanding of what function sustains a particular behaviour and for applying relevant measures to reduce it. Following a research-based approach, the WA enables users to create a baseline of behaviour data. This provides an initial collection of qualitative and quantitative records about the target behaviour acquired from the mobile app in the places where the target behaviour generally occurs.

Quantitative data is a collection of frequencies or durations of the observed behaviour. Qualitative information is collected through Antecedents, Behaviour, Consequences (ABC) charts aimed at identifying trigger events and common consequences of the child's behaviour. Starting from this dataset, health professionals will be able to identify the main function that sustains the unwanted behaviour and to plan a behavioural intervention to reduce or eliminate it. It could also be used to replace a negative behaviour with a positive one.

During the intervention period, the child's network users gather a new observation dataset in order to compare with the original baseline data and to evaluate its effectiveness. The WA allows users to see the effects of the intervention on a scatter plot. As well as this the measured behavioural outcomes are evaluated using the calculation of the TAU-U. This is a recognised and robust statistical non-parametric aid applied to measure the effect-size and to consequently reduce the risk of identifying an effect that is not present or to miss an effect that is present.

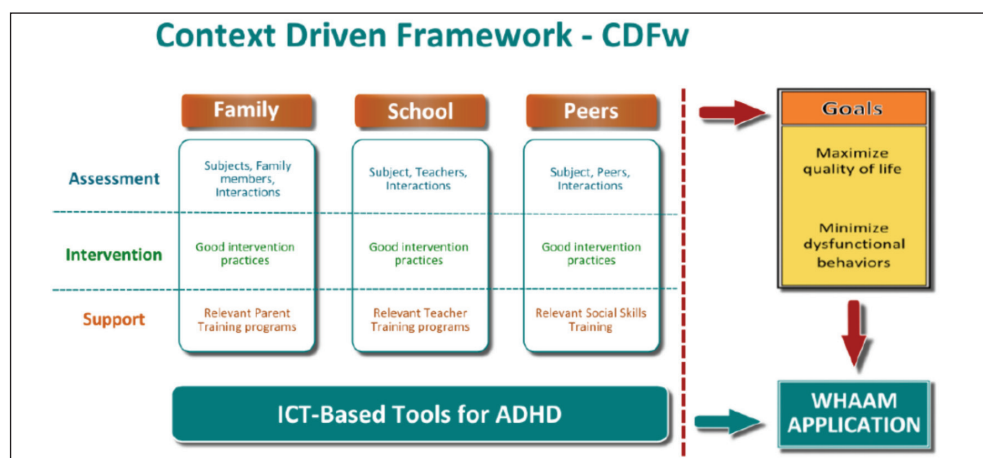
2. Educational resources

As mentioned earlier, the Web Application was developed based on the principles of Functional Behaviour Analysis and enables us to collect the child's challenging behaviours during their daily life in a specific, measurable, attainable, realistic and timely way. However the effectiveness of the Web Application expects users – teachers, parents and health professionals – to have a base knowledge of functional behavioural analysis principles and its implementation. Within this context it was quiet obvious that some members of the network may need to gain or enhance knowledge their on these specific issues. To meet this need the project provides the following educational resources.

a) The Context Driven Framework (CDFw)

The CDFw is a collection of theories, methods and ICT tools for the assessment, monitoring and intervention of ADHD children, available at this web address <http://www.whaamproject.eu/framework.html>. It is centered on and around the specific life contexts of the subject, school, family and their social relationships with peers. Each context was analysed through three areas describing the treatment of the disorder these are assessment, intervention and support. The CDFw analyse also the relationship between the use of ICT in the field of ADHD describing a collection of tools developed in this sector. The last section illustrates the structure of the WHAAM application, its design and development process.

This is aimed not only at specialists in the field of ADHD but also at parents or teachers that are interested in improving their knowledge on the specific characteristics of the disorder. It shows the most suitable methodologies and strategies to intervene at home and school using the support of ICT.



b) The WHAAM child's network training course

The training courses design and content took into account current best practice guidelines and techniques to conduct functional behavioural assessment. It specifically kept in mind the projects common background which was built upon the development of the Context Driven Framework. The training course was developed with the aim of creating a network of the key people around children with ADHD: teachers, parents and health professionals introducing them to a unique learning path. The main goals to follow were: (1) to understand and apply the principles of Functional Behavioural Assessment (FBA) in a manner that, through observation of the child, can identify the function of their challenging behaviour. (2) Understand specific behavioural techniques to help improve the child's behaviour in order to feel more confident while addressing the child challenging behaviours and promoting positive ones. (3) Use the WHAAM Web Application as a support tool for monitoring behavioural assessment and intervention.

The training course consisted of a 6-session program. During the lifespan of the project the training was held in three countries (Italy, Portugal and United Kingdom), but now it is freely available as one of the project's educational resources.

This product is aimed at health and educational professionals and parents of children with ADHD. The intention is to create an effective network of caregivers who are familiar with behavioural modification techniques and the Web Application features.

! The decision to train the ADHD child's network (parent, teacher, and therapist) as an overall learning group is informed by the model of collaborative learning circles characterised by a strong interaction among participants. This specific setting enables the members of the network to start an open dialog and promote a deep reflection on suitable events in the ADHD field. It establishes a common language and shares educational resources that make it possible to guide the learning group in the formation of a contextualised monitoring process linked to a personalised intervention.

c) The online WHAAM Higher Education certificate course

The E-Learning module design is founded on previous products from this project, specifically the contents prepared for the parents and teachers training, the WHAAM App and the Context Driven Framework.

Our intention is to get learners involved in reflection processes that are focused on ADHD theories and multimodal approaches. This e-learning module seeks the development of a learning community engaged in studying and testing methodological and technological approaches for supporting the inclusion of ADHD students in educational processes. Following this goal we introduced a feature for this e-learning module, it was the intention of actively immersing learners in the praxis of ADHD assessment and intervention processes. We designed the WHAAM Web Application as an innovative and supportive tool to facilitate that processes. The duration of this module was previewed for six-weeks, with an average attendance of four hours a week. However, the module's content was planned to be permanently available, allowing learners to progress at their own pace.

This module is aimed at higher education students (psychology, medicine, education) and teachers or experts working with ADHD children who are interested in enhancing their knowledge, skills and competences of the monitoring and treatment of ADHD pupils.

The product is freely accessible but if you are a university student you can participate in the certified course gaining two credits.

How to use the WHAAM application

The WHAAM application has been designed to be used by people who do not have a strong technological background. From a technical point of view, users need just an Internet connection, a browser, and a mobile phone with the Android or iOS operating system installed. The skills required to use it are simply the ability to navigate a website, creating, editing, reading, and deleting resources about children's behaviours.

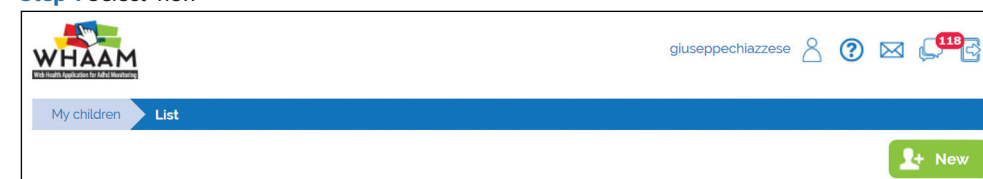
The most challenging task, using the WHAAM application is not the technological issues. In order to use the application effectively users need to be aware and understand both its theoretical and methodological background. For this reason, users can enrich their knowledge about ADHD and the functional assessment process. They can do this by taking advantage of both the training materials and the eLearning course provided by the WHAAM partnership.

What if I do not have time to study and I want to use the WHAAM application? This is not a problem! The presence of a skilled and experienced member of the children's network (such as health professionals or teacher specialised in special education) will support other members of the network by monitoring the case.

When anyone decides to start using a new application they generally experience a "steep learning curve" because they have to familiarise themselves with the features used by the system. To help with this we have a step-by-step guide that will help you during the early use of the application or as a support to clarify doubts or oversights later.

A walk through step by step guide

Step 1 Select "new"



Step 2 Insert required information (the fields with an asterisk must be filled in). After it's completed, select "save"

New Child

Nickname *

Surname

Name

Sex * -- Sex --

Year of birth * -- Year --

[Add sibling](#)

Save

What personal information do I need to insert?

The WHAAM application is aimed at supporting effective behavioural interventions in ADHD children by paying careful attention on the safety of the data. If you don't like the idea of using the child's real name or data, please do not hesitate to use just a nickname, sex and year of birth. The name and surname of child are an optional fields. For our part the safety of personal data is backed by the use of authenticated credential management procedures and the use of encryption techniques.

Who are people able to access personal information?

The child personal information is shared just with the agreed people involved in the child's private social network. Other people are not allowed to access it!

Step 3 After filling in the data about the child, you are automatically taken to the definition of your specific role. Select your role and the check box saying that you have the parents consent to access data and to invite new people to join the child's network. Select "save"

Specify your role

Role * -- Role --

I have a parental consent or equivalent authorization to access data and invite new people to join the child network.

Save

Why I have to specify my role?

The role in the child virtual network is crucial to attribute the right privileges to the logged user. In particular, health professionals and parents of the child have higher privileges than other profiles. Health professionals are enabled to plan behavioural intervention plans based on the data gathered by the child virtual network. Parents can manage the participation of users in the network, inviting people with whom they like to share personal information

Is the role specified here global in the WHAAM application?

No. The role is contextual to the child for whom you are working. For instance, you could be an health professional for a child and a grandfather for another one.

Can I invite someone else if I have not a parental consent or equivalent?

Yes, you can invite new people to join the child network. If you are the person who inserted the child record, you take the responsibility to share the child data with new people. Otherwise the invitation will be moderated by the person who has inserted the child for the first time in the WHAAM system.

Case data

Step 4 A row of information about your child will appear. Here you begin by selecting "case data".

Simon_sun

Age: 10
Sex: Male
Sibling: 0

Case data Behaviours Child network Invitation

Step 5 Then you can start to insert information in each of the sections by selecting "new".

Diagnoses + New

Diagnosis date	Subtype	Age of onset	Comorbidity
----------------	---------	--------------	-------------

Medications + New

Start date	End date	Medication	Dosage	Frequency
------------	----------	------------	--------	-----------

School information + New

School year	Name of School	Key Stage
-------------	----------------	-----------

Discipline referrals + New

Date	Discipline referral	Motivation
------	---------------------	------------

Other events + New

Date	Description
------	-------------

Step 6 The information inserted will appear as is shown in the picture. You can access details, edit or delete information by selecting the symbols in the right hand column.

Diagnoses + New

Diagnosis date	Subtype	Age of onset	Comorbidity
1 Feb 2015	Combined	10	Oppositional Defiant Disorder (ODD)

Medications + New

Start date	End date	Medication	Dosage	Frequency
1 Feb 2015	1 Aug 2015	Adderall	5 mg	daily

School information + New

School year	Name of School	Key Stage
2014-15	Leighton Park School	5th

Discipline referrals + New

Date	Discipline referral	Motivation
28 May 2015	Parent Contact	He punched out a peer

Other events + New

Date	Description
3 Jan 2015	the family moved in another city

Building the Child Network

Step 7 Select the option "invitation" to begin to build the child's network.

Simon_sun

Age: 10
Sex: Male
Sibling: 0

Case data Behaviours Child network Invitation

Step 8 Insert the email address of each person (e.g., parents, health professionals, teachers) that will make up the team. All people invited will be able to access the information and to add new information. Select “send” to submit the invitation.

New Invitation

Email *

What invitation means?

As in the most popular social networks like Facebook, Google+, or LinkedIn, you can create a virtual network composed of people who are relevant for the ADHD child. You have just to ask them to join you via email filling in the invitation form.

What other people in the network can do?

They can share knowledge and relevant information about the child behaviors between themselves in order to work efficiently together.

No abuses

If you have further problems, please contact abuses@whaam.pa.itd.cnr.it

Step 9 After the invitation is sent you can check the composition of the team by selecting “child network”



Simon_sun
Age: 10
Sex: Male
Sibling: 0


Step 10 Then the names as well as the role of each person involved in the child network will appear.

My children Simon_sun Child network List

Username	Surname	First name	Role
gianlucamerlo	Gianluca	Merlo	Father
giuseppeschiazzese	Chiazzese	Giuseppe	Health Professional

Planning Observations

Step 11 Select the option “behaviours” and then “new” to plan the observations.




Simon_sun
Age: 10
Sex: Male
Sibling: 0

My children Simon_sun Behaviours List

Step 12 Define the “behaviour category” and the “behaviour” according to the options provided in the boxes. Fill in the “description” of the behaviour, indicating also the “place” and “setting” that they occur. The right hand square shows you what should be inserted in each box.

Step 13 After defining the target behaviour select “assessments” to plan or access the assessment data.

i Success! The behaviour section has been created successfully



Bullying adults, peers, parents, siblings, etc.

Description: Threatens school personnel by aggressive posture, invading personal space, and using verbally threatening and abusive language

Defined by: Gianluca Merlo (Father)

Place: School

Setting: Corridors

Step 14 To plan the assessment select the option “new assessment” and then select “new baseline”

My children Simon_sun Behaviours Interrupting or intruding on o [..] Assessments List

Created at	Phase	State	Observation gathered	ABC gathered	From	To

My children Simon_sun Behaviours Interrupting or intruding on o [..] Assessments Plan

Step 15 Select the period of observation – “start date” and “end date” – that will begin to identify the baseline of child behaviour. Specify the “observer” (who from the network will do the observations?), the “minimum number of observations” that will be done and the length (in minutes) of each observation. The observation type should be defined according to the options provided in the box, i.e., duration or frequency. After this you should specify who, from the network, is able to add ABCs– i.e., people that can edit or contribute to the identification of antecedents and consequences of the child’s behaviour. Then select “save”.

New Baseline

Start date *

End date *

Observer *

Minimum number of observations *

Observation length in minutes *

Observation type *

People allowed to take ABCs * giuseppeschiazzese

What is a Baseline?

The Baseline is the current level that a behaviour occurs prior to intervention. In the WHAAM application, during the baseline period, people involved in the child network will be allowed to gather data about the behaviour. Select an observer, specify the number of observation sessions and the length in minutes of each observation. Please, remember that to have access to the evaluation area of the intervention, the system requires minimum 4 observation sessions.

What baseline data are useful for?

Baseline data are used to hypothesize the function of a behaviour and to plan an intervention.

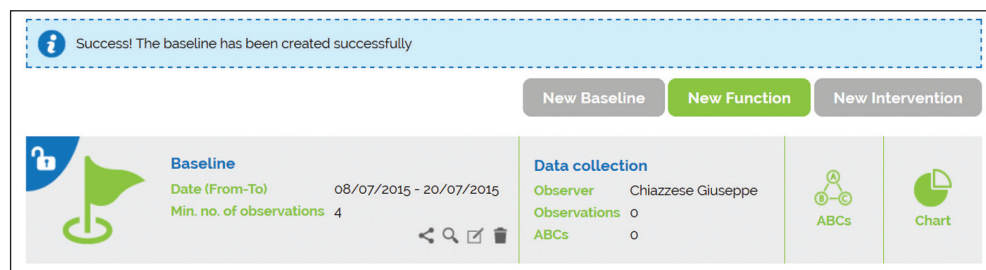
What is the observation type?

The data collected through the systematic observation are processed differently according to the choice: frequency or duration. In the former case data will be processed counting the behaviour occurrence. In the latter the WHAAM application processes data counting percent of time that a behaviour occurs during the observation period.

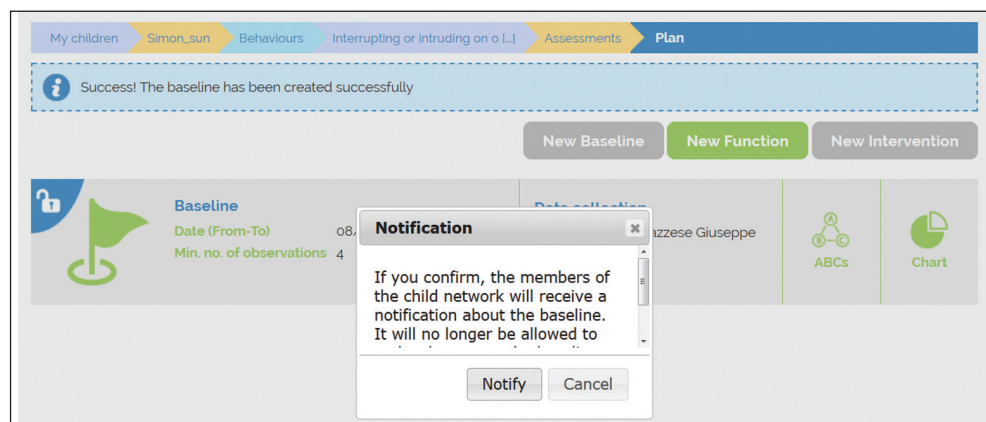
How data are collected?

Data are collected using the WHAAM mobile app directly on your mobile phone or tablet.

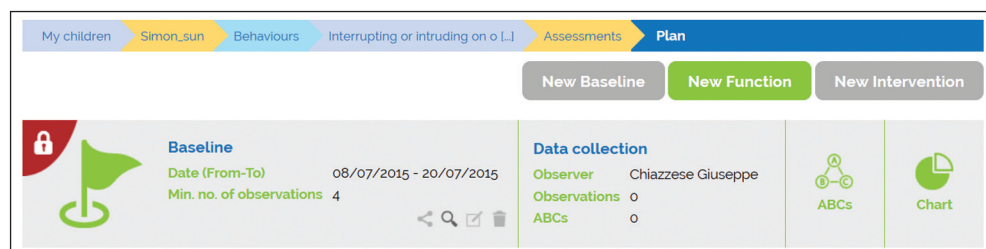
Step 16 Select the network symbol, in the right corner of the first column, to finalise the planning and to start the observation on the mobile device.



Step 17 It will open in a window then you select "notify". This is to inform the people in the network that the baseline was created.



Step 18 After this notification and when the symbol of a closed lock appears (left hand side) you can then begin the observations on the mobile device.

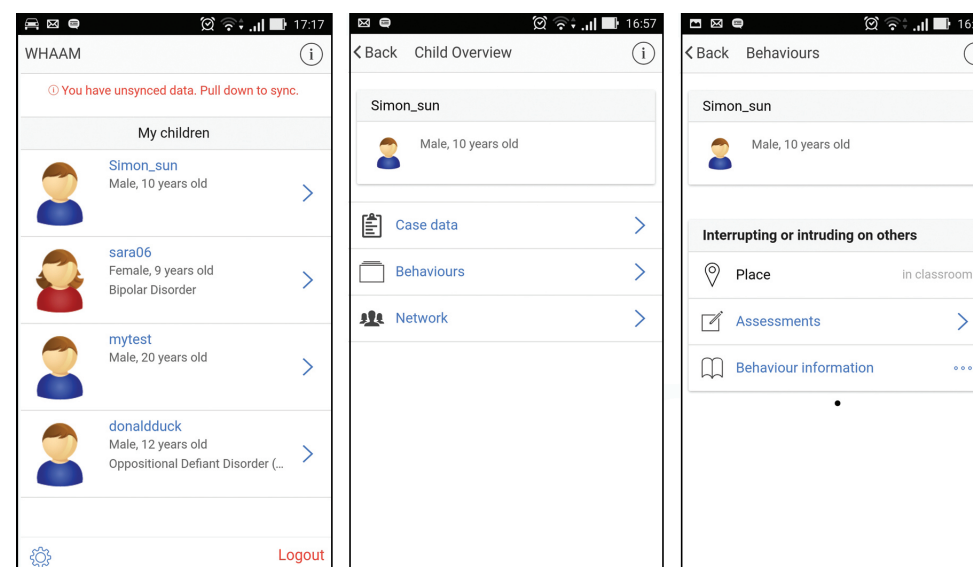


Conducting the observations in the mobile device

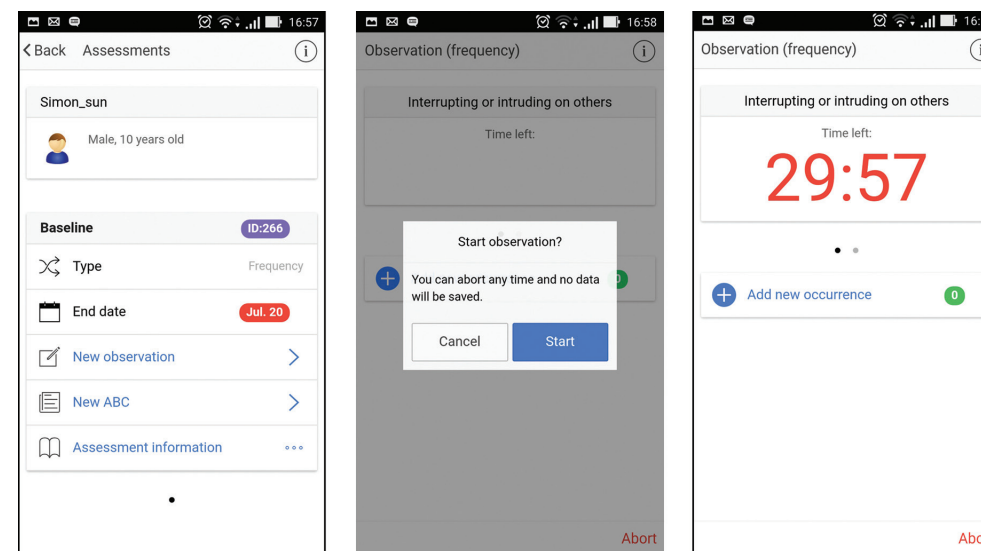
Step 19 After completing the "log in" select the child you want to observe.

Step 20 Select the option "behaviours" (in "case data" and "network" you can consult information about the child and the members of the network).

Step 21 Select the option "assessments" (in "behaviour information" you can refer to information about the target behaviour).

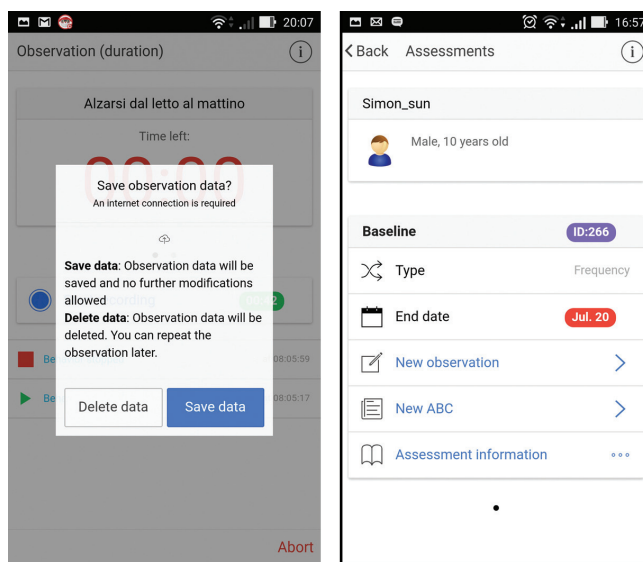


Step 22 To begin the observation select "new observation". Then select "start". The previously set time for the observation will begin and you then press "add new occurrence" whenever the behaviour happens/ or while behaviour occur.



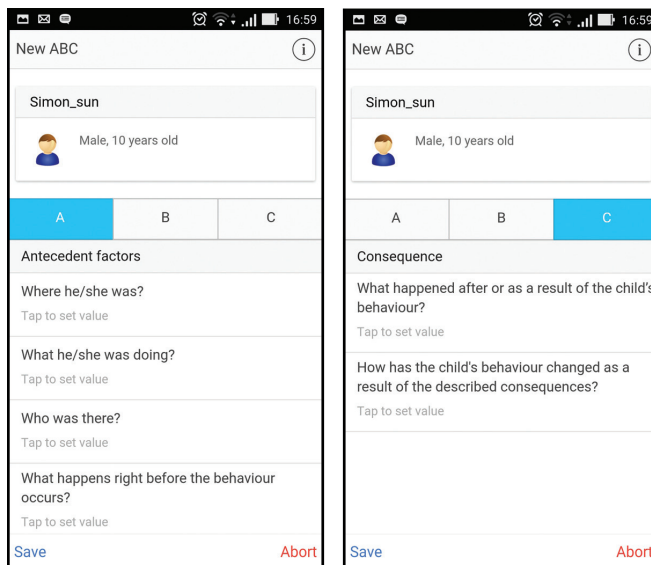
Step 23 At the end of the observation period select "save data" to store and process the data.

Step 24 Select "new ABC" for describing the antecedents and consequences of the target behaviour.



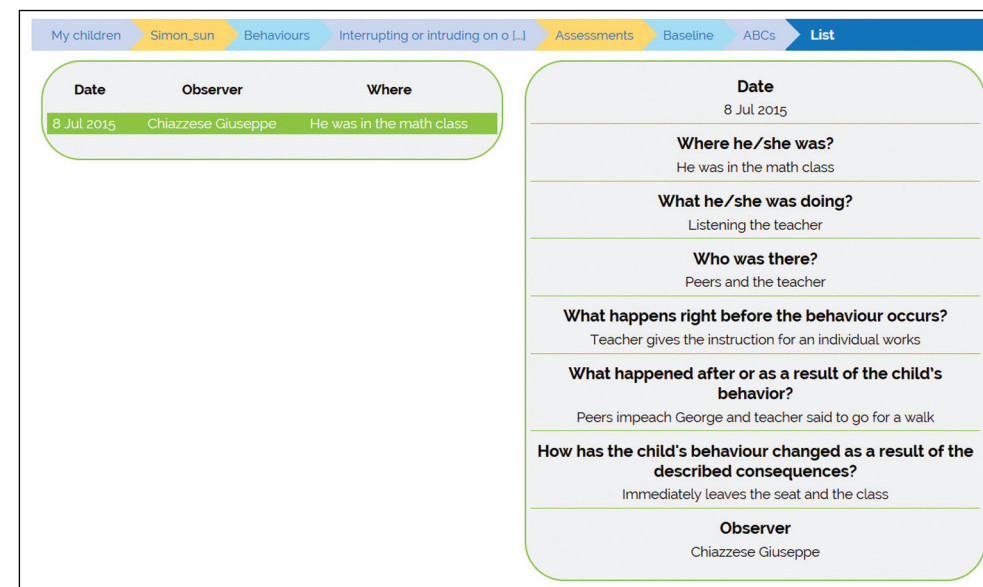
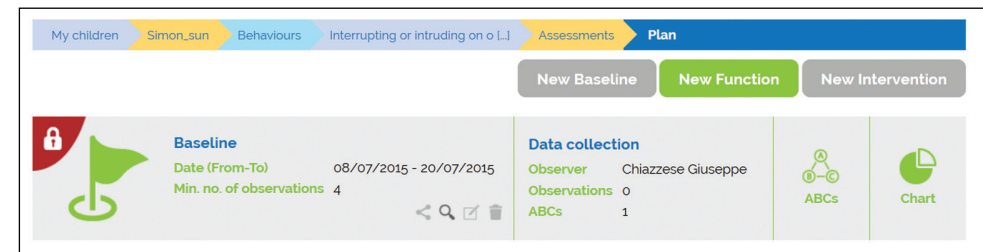
Step 25 To set the target behaviour you can define the antecedents selecting the letter A and describe “where he/she was?; “what he/she was doing?; “who was there?” and “what was happening right before the identified behaviour started?”. Then select “save”.

Step 26 Select the letter “C” to begin to specifically describe the consequences of the behaviour. “What happened after or as result of the child’s behaviour?” and “How has the child’s behaviour changed as a result of the described consequences?” Press “save” and then “save data”.

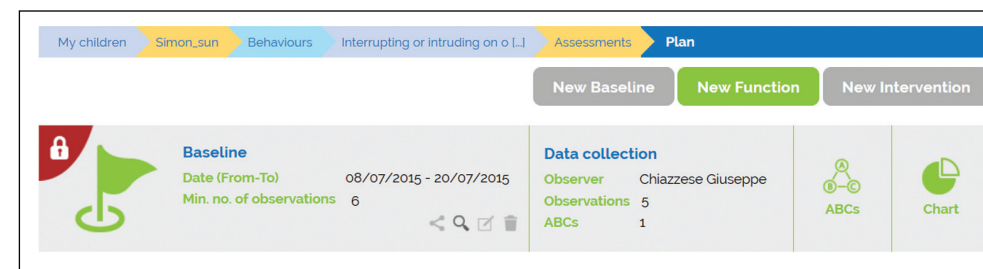


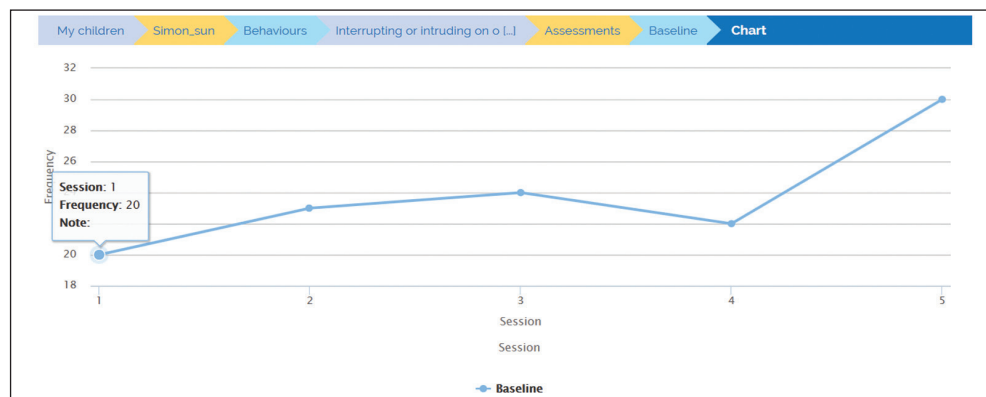
Analysing the observation data again, using the computer

Step 27 After saving the baseline data, you can study the antecedents and consequences of the described behaviour by selecting “ABC”.



Step 28 Select the option “chart” to obtain a line graph of the observations conducted on the mobile device.





Planning the intervention

Step 29 To define the behaviour function and begin the intervention planning select “new function”.

Step 30 Describe “when” the target behaviour occurs and select the “behaviour function” using the options offered in the box. Select “save”.

New Function

When *

Behaviour function * -- Behaviour function --

Note

Save

How to identify the behaviour function?

The behaviour function describes “why” the behaviour occurs. You have to fill in the field “When” to describe the specific social, affective, cognitive, and/or environmental events in relationship with the occurrence of behaviour.

What are the possible behaviour function?

It is often helpful to think, “What purpose is this behaviour serving the child?” when you have to identify the behaviour function. You can find one of the following four functions as purpose of behaviour:

Escape or avoidance
Escape or avoidance: the child engages in the behaviour to escape aversive socially mediated attention.

Escape/Removal of Task or Activities: The child engages in the behaviour to escape difficult tasks or demands.

Obtain a tangible item or gain access to a desired activity
The purpose of the behaviour is focused to obtain a specific item or engage in a specific activity from another person. For example, a child hits mom because s/he wants the toy mom is holding. (If this behaviour results in mom giving the child the toy, s/he will be more likely to engage in the same behaviour in the future to get mom’s attention.) Common forms of tangible items include, but are not limited to, food, toys, movies, video games, etc.

Sensory stimulation
The individual engages in the behaviour because the response-produced stimulation possesses reinforcing characteristics. For example, a child spinning a bowl on a table to produce the specific auditory stimulation unique to that object.

Social attention
The child engages in the behaviour to get attention from another person. For example, a child throws a toy for gaining the mom’s attention.

What is the purpose of the Note field?

You can use the Note field to add any further useful information.

Step 31 Then select the network symbol in order to notify the network members about the new information you have collected and saved. After the notification the symbol of a closed lock will appear.

Step 32 To plan the new intervention select “new intervention”.

Step 33 You should then register the beginning and the end of the intervention period and select “add strategy” you can then describe the strategy that will be used to reduce or eliminate the behaviour and who will be responsible for implementing the strategy (“assign to”). Select “save”.

New Intervention

Start date *

End date *

[Add strategy](#)

Name *

Description *

Assign to giuseppechiazzese

[Remove strategy](#)

Set a New intervention

To set a New intervention, please select the start and the end date: this represent the period in which some actions, or strategies, will be applied

Add o remove a strategy

The intervention strategies are the actions applied to reduce or eliminate the behaviour. To add a strategy, please provide its Name, a clear Description and Assign it to one or more network components displayed

For instance:
 - Name: Token economy
 Description: a token (i.e. a coin, a sticker, etc.) is an object that is given to a child every time he exhibits an appropriate behavior. After having gained a predetermined number of tokens, the child can exchange them for material reinforcers (i.e. sweets, toys, interactive activities, etc.). A token-based system requires three base elements: 1) objects that are small and quantifiable 2) a reinforcer with which exchange them and 3) a behaviour defined in a clear way.
 - Assign to: select one or more network components who will apply the strategy

Step 34 Select the network symbol to notify the team that a new intervention was inserted. After this notification the symbol of a closed lock will appear.

My children > Simon_sun > Behaviours > Interrupting or intruding on o [...] > Assessments > Plan

Baseline

Date (From-To) 08/07/2015 - 20/07/2015

Min. no. of observations 4

Data collection

Observer Chiazzese Giuseppe

Observations 0

ABCs 1

Function

Behaviour Interrupting or intruding on others

Occurs when teacher of math gives him an individual task

In order to Escape or Avoid

Note

Intervention

Date (From-To) 21/07/2015 - 31/07/2015

Observer Chiazzese Giuseppe

Observations 0

Strategies

Modify task assignment reduce the size of the math tasks - provide breaks between the subunits of the tasks

Assigned to Chiazzese Giuseppe

Evaluation

You have to gather at least 4 observations for both the baseline and the treatment phases to have access to the evaluation of the data efficacy.

Step 35 You can then begin another observations period to verify the effectiveness of the strategies. As you can see in the "evaluation" line you should make at least 4 observations in order to evaluate the effectiveness of the strategies.

My children > Simon_sun > Behaviours > Interrupting or intruding on o [...] > Assessments > Plan

Baseline

Date (From-To) 08/07/2015 - 20/07/2015

Min. no. of observations 4

Data collection

Observer Chiazzese Giuseppe

Observations 0

ABCs 1

Function

Behaviour Interrupting or intruding on others

Occurs when teacher of math gives him an individual task

In order to Escape or Avoid

Note

Intervention

Date (From-To) 21/07/2015 - 31/07/2015

Observer Chiazzese Giuseppe

Observations 0

Strategies

Modify task assignment reduce the size of the math tasks - provide breaks between the subunits of the tasks

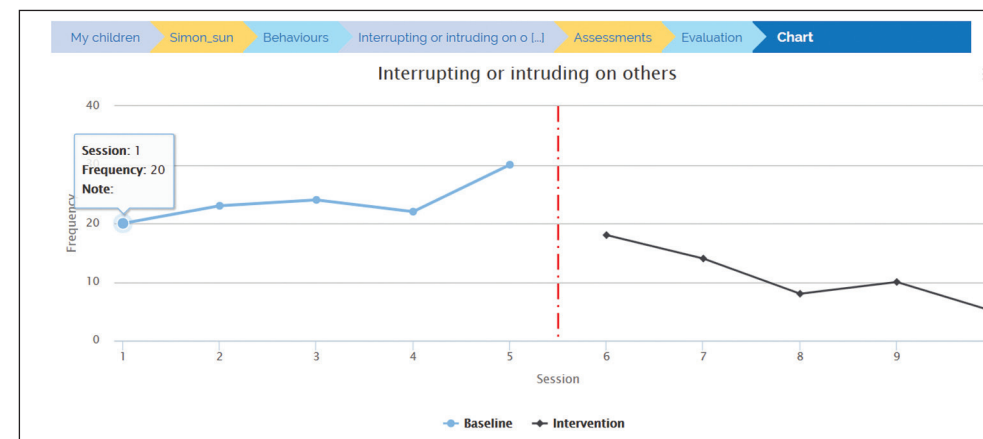
Assigned to Chiazzese Giuseppe

Evaluation

The effect size is: -0.978. The treatment has a large effect on the decrease of the behaviour occurrence.

Attention: The time distance between sessions should be regular as more as possible.

Step 36 At the end of this you can select the symbol "chart" (on the evaluation line) in order to compare the frequency/duration of the problem behaviour between the baseline and the intervention phase.



Step 37 While looking at the evaluation line select “details”, then you can also obtain a TAU-U index to estimate the effect size of the intervention on the occurrences of targeted behaviour.

My children Simon_sun Behaviours Interrupting or intruding on o [...] Assessments Plan

New Baseline New Function New Intervention

Baseline

Date (From-To) 08/07/2015 - 20/07/2015

Min. no. of observations 4

Data collection

Observer Chiazzese Giuseppe

Observations 0

ABCs 1

Function

Behaviour Interrupting or intruding on others

Occurs when teacher of math gives him an individual task

In order to Note Escape or Avoid

Intervention

Date (From-To) 21/07/2015 - 31/07/2015

Observer Chiazzese Giuseppe

Observations 0

Strategies

Modify task assignment reduce the size of the math tasks - provide breaks between the subunits of the tasks

Assigned to Chiazzese Giuseppe

Evaluation

The effect size is: -0.978. The treatment has a large effect on the decrease of the behaviour occurrence

Attention: The time distance between sessions should be regular as more as possible.

Evaluation

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Attention: The time distance between sessions should be regular as more as possible.

An example of using a specific intervention in School: 123 Magic

I observed Tom, an 8 year old boy who was constantly presenting difficulties in his primary classroom. His general behaviour was described as disruptive, argumentative and rude. I spoke with the teacher and gathered some background information prior to observing.

I observed him on four separate occasions and built up a baseline of specific behaviours using the WHAAM application. The main areas we choose to collect information on were:

1. Out of seat behaviour
2. Arguing with the teacher
3. Calling out answers to questions before the teacher has finished the question.

These were identified the most frequent areas of negative behaviours that Tom showed in class.

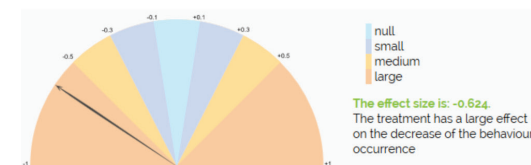
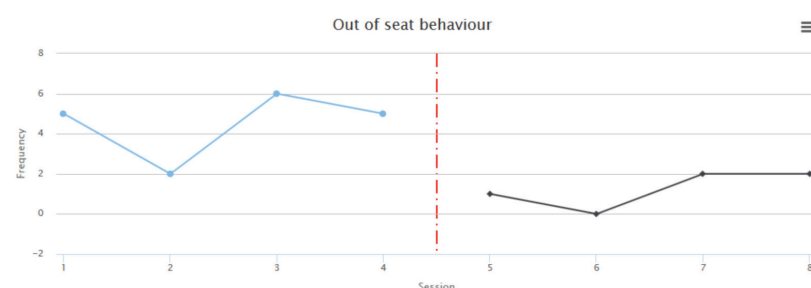
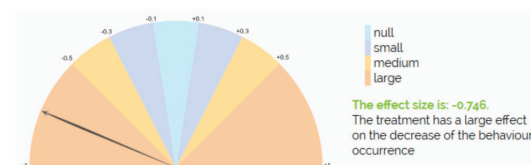
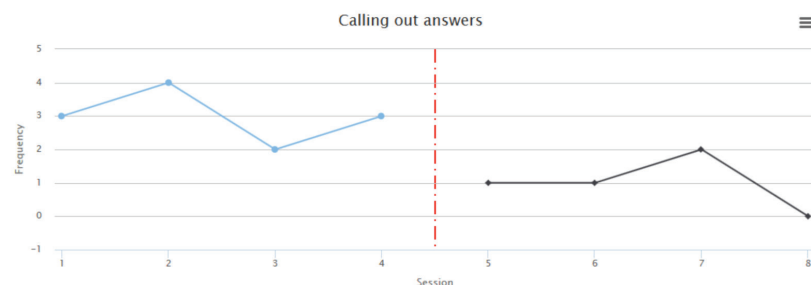
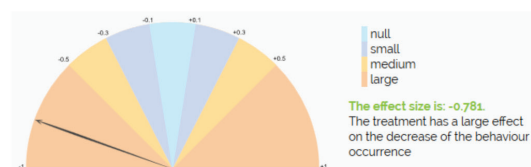
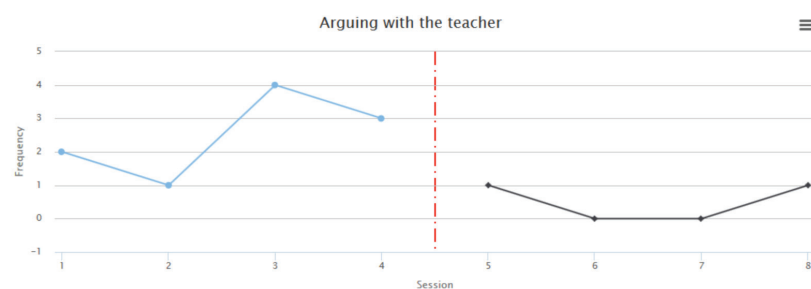
During the four 15 minute observations we gathered the baseline information.

We then taught the teacher to use 123 Magic and she introduced this programme into her classroom. 123 Magic is the preferred behaviour modification programme that ADDISS uses and can be taught in a short time and works quickly.

We were able to identify that we needed to use STOP behaviour techniques. This type of behaviour is where we need to STOP the behaviour happening. We see this as different from getting someone to START doing things, like their homework. The best way to change STOP behaviours is to use the 123 Magic counting method as an initial way of modifying Tom's behaviour and helping to promote positive choices.

She used the programme for two weeks. I went back into her classroom for four more 15 minute observations of the identified behaviours using the WHAAM application.

Tom's behaviour improved significantly after we introduced the 123 Magic approach. The figure included in the next page compares the series of observations gathered during both the baseline and intervention periods and shows the intervention effect size. This is a very positive result on its own merits. However it is also supported by the informal reporting from the teacher that she felt her personal stress levels were lower. She has started to enjoy teaching Tom much more and the general atmosphere in the classroom has improved enormously. Tom appears happier and has not had a detention since the teacher introduced 123 Magic. Tom is responding to her counting.



After the WHAAM project finishes

The sustainability of the WHAAM service, beyond the life of the project was a key factor for this initiative to provide. In fact, the WHAAM project was aimed at encouraging innovation and creativity in the application of ICTs for health monitoring in many of the child's significant life contexts. The main targets are students at risk of exclusion, such as children and young adults with special needs, as well as families and teachers engaged with these subjects. With regards to these groups, the project was inspired by thoughts about the positive fallouts that the sharing of evidence-based practices would have on the wellbeing and climate of the child's life. Therefore, we intended to answer the following question:

After the end of the project is it possible to continue using the WHAAM service?

- To encourage a long-term impact the project faced the challenge to spread this new approach within relevant professional communities that are involved in the treatment and management of ADHD. Moreover, the use of ICTs, when sustained by a rigorous theoretical framework, can help to overcome cultural, organisational and logistic barriers.
- The different components of the WHAAM service - theoretical framework, web and mobile application, parent and teacher training, eLearning module - are all designed to work together effectively and the knowledge of one component will encourage the acceptance of the others. Therefore, the service set up during the WHAAM project will contribute in:
 - Provision of a lifelong learning program to increase knowledge and improve the quality of cooperation between researchers, professionals, educational operators and families at European level, on the topic of ADHD treatment with psychosocial approaches.
 - Financial savings in the implementation of cognitive-behavioural programs and in the training of teachers and parents involved in the treatment of ADHD.
 - Improvement in the academic performances and social skills of ADHD students.
 - Improvement in the quality of life of subjects affected by ADHD, and for their families.
 - Dissemination of information of used by policy and decision makers in assessing the effectiveness and efficiency of mental health policies and interventions.

How can an interested people find useful information about the WHAAM service?

The WHAAM partners in each European country, which are involved in the consortium, intend to support the formation of a network of families, associations, schools, and professionals. They are also aiming to organise a training course, adopt the eLearning module and use the application and validate results. Any user interested in adopting the WHAAM approach can contact a member of this network to receive support and suggestions. Furthermore, the materials used in the parent and teacher training programs will be available to download from the public site of the application.

The delivering of the eLearning module is planned in two different forms:

- An accredited course: delivered during a specific period in the year, by an academic institution, under the supervision of an instructor. The attendance of this course enables the student to gain credits by the academic institution.
- Self-instruction course: any person interested can study and download the same content freely. In this case, your study of the course material will not gain learning credits.

- The network will be the primary means through which we hope to achieve our most ambitious goals:
- Supporting educational policies that promote the integration of students with special needs.
- Supporting policies aimed at promoting equality, social cohesion and active citizenship for students with ADHD.
- Improvement in the social life of communities, due to the reduction of some of the antisocial behaviours related to ADHD.
- Supporting economic and social growth facilitating the integration of people with ADHD within the life of communities and the workplace

However, going beyond the WHAAM application means we also need to promote the use of the WHAAM approach beyond the specific disability. An ITC-based system to monitor behaviours within intervention plans that is based on a functional analysis model can be useful in many different contexts and situations. This will be helpful for pupils with typical development and those with other disorders.

Is the WHAAM service only useful for disorders or related behavioural problems?

The main reason that the application was developed was to be specifically used with ADHD. However the feedback, during the development process, from potential stakeholders showed that there was a great deal of flexibility within the product. It was believed that it was useful for other psychopathological areas that aim to connect their intervention to the results of a behavioural functional analysis. This can easily be seen in the case of autistic spectrum disorders and in conduct disorders but it is also useful with specific learning disabilities. It can be used, for example, when monitoring spelling mistakes or reading mistakes as they can be treated 'as if' they were behaviours that can then be operationalised and successfully observed.

For example, if you are a teacher you will be aware that students with dyslexia makes many spelling mistakes. The first strategy is to carefully examine their exercise books in order to estimate how many errors they make, and discover where the areas are that they the most frequent occur (i.e. math or science). Then to identify the type of mistakes they tend to make (i.e. swap letters, omit double consonants). Although you may not be aware of it, you are actually making an observation and gathering a useful set of baseline data. Often you will begin to plan a reading support intervention after this type of first step. Then you can introduce the various strategies designed to help students manage their problems.

At this step, you will share the intervention you have planned with the child's parents to help them understand how to help their child at home during homework or coursework. Creating alliances, which are important to help reduce the child's anxiety levels, to inform the parents' understanding and to help the child grow in a learning environment of calmness and confidence. At the end of your intervention, you are used to evaluate whether it worked or not, comparing a new set of observations with the baseline data. This comparison will measure how much the target behaviour increased or decreased.


Well! The path you followed by now identifying a target behaviour, building a network between caregivers, gathering observational data, planning an intervention, and verifying the results can be easy through the use of the WHAAM application. Try the WHAAM application for yourself and to define the initial behaviour that you would like to observe, increase or replace. Remember how important it is to share your work with the others who take care of the child's health and education.

How you can contribute


All people interested in ADHD issues as well as parents, teachers or health professionals can contribute to the project's activities by taking part in the training course using the Web application. You can help by experimenting with the Web application in your own home, school or clinical setting.

If you are a student, a university researcher or professor you can join with the WHAAM e-Learning module <http://whaam.es.eip.pt/>


If you are interested in receiving more information please contact the project team whaam@itd.cnr.it


 The WHAAM application can be applied to others situation in which a systematic process of behavioural monitoring is needed, and not only for clinical purposes

Useful links


 Project Web site: <http://www.whaamproject.eu/>

 WHAAM service site: <https://app.whaamproject.eu>

 e-Learning site: <http://whaam.es.eip.pt>

 WHAAM App for Android device
<https://play.google.com/store/apps/details?id=eu.whaamproject.app&hl=it>

 <http://appstore.com/whaam>

 Context Driven Framework (CDFw)
<http://www.whaamproject.eu/framework.html>

 <https://www.youtube.com/WhaamprojectEu>

 <https://plus.google.com/+WhaamprojectEu>

 <https://www.facebook.com/whaamproject>

 @whaamproject (<https://twitter.com/whaamproject>)

 whaam@itd.cnr.it

Contacts

whaam@itd.cnr.it; whaampartners@itd.cnr.it;

Newsletter: <http://www.whaamproject.eu/menunewsletter.html>

Project coordinator antonella.chifari@itd.cnr.it

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Antonella Chifari
Cognitive-Behavioral Psychotherapist
WHAAM Coordinator

Authors

[Italy] www.itd.cnr.it

The Italian Institute for Educational Technologies (ITD) is one of the research institutes of the Italian National Research Council with more than 40 researchers, technologists and technicians on its staff. It has two branches one in Genoa and the other in Palermo. The main disciplines of reference for the Institute's research activity are the cognitive sciences, computer science and instructional theories. The research activities are focused on the development and integration of ICT in various educational settings (school, university, business); the study of technological innovation as a learning resource; educational issues related to different disciplines and topics (humanities, sciences, environmental education, health, etc.); learning issues of particular social significance (disability, learning difficulties, social disadvantage, intercultural issues, etc.). In this framework ITD has participated in several national and international funded projects. WHAAM ITD is the coordinator and takes the lead part in the development of the web service.

[Portugal] www.esi.ipp.pt

The School of Education IPP offers a range of undergraduate and postgraduate programs, including 12 master degrees and a joint doctoral degree (with the University of Santiago de Compostela, Spain). The Support Unit for Inclusive Schools (UAEI) as a

Research Center was created in 2004 to support schools in the inclusive process by providing: (i) consultancy; (ii) training to educational professionals, specifically on ADHD, ICF-CY, management classroom and inclusive education; (iii) assessment and intervention services to young children framed by "Transdisciplinary Play-Based" methodology (Linder, 1993, 2008). The UAEI has been involved in several national and international research and collaboration projects, namely related to: parents and teacher support in ADHD; evaluation of educational policies; consultancy of the ICF-CY use in Education; translation and adaptation of assessment tools to Portugal (e.g., Supports Intensity Scale™, AAIDD, 2003;2012). In WHAAM the Portuguese team has contributed with seriousness and eagerness to two of the most important phases of the project: designing and the development of the parent training course and of the e-Learning module.

[Greece] www.auth.gr

The Aristotle University of Thessaloniki (AUTH) serves as the metropolitan University for southern Europe. Its Medical school consists of >500 academic staff members, and >3500 active students. It is very experience in EU projects both as coordinator and partners. In this project AUTH participates through the Lab of Medical Physics which leads research and initiatives in Medical Education. The Lab of Medical Physics is a major research and development centre in assistive technologies, applied neurosciences, medical education, affective computing, semantic web, radio diagnosis and non-ionizing radiation. In Medical Education Informatics, it focuses on exploring shifting paradigms in education and breakthroughs in information technologies for implementation in novel and impactful learning modalities in healthcare education. The AUTH group consists of a diverse scientific pool ranging from healthcare and education experts such as medical doctors and academics through to technology experts such as engineers IT specialists and programmers. In WHAAM the group has developed the mobile part of the web service, contributing with competence in all phases of the complicate process of development and delivering.

[Ireland] www.tcd.ie

Founded in 1592, Trinity College Dublin is the oldest university in Ireland and one of the older universities of Western Europe. On today's campus, state-of-the-art libraries, laboratories and IT facilities, stand alongside historic buildings on a city-centre 47-acre campus. Trinity continues to attract intellectually strong students from Ireland and abroad. TCD School of Computer Science and Statistics, through Dr. Doherty, provided design leadership and Human Computer Interaction expertise to the project, helping to address issues such as student engagement and usability, whilst also playing a role in the design and conduct of evaluations.

[UK] www.addiss.co.uk

ADDISS stands for Attention Deficit Disorder Information and Support Service. It is the National UK registered charity, which provides up to date and accessible people-friendly information and advice related to ADHD. They do this in many ways. They operate the only national help line specifically for ADHD issues in the UK. They organise training courses across the UK and internationally in Europe. They are often sought out by schools, parents, professionals, healthcare and the press for advice and information. Whatever issues are causing concerns that are linked to ADHD they will do their best to help. Their contribution in WHAAM was precious for the enormous experience in satisfying and understanding the special needs of all ADHD families.