



**AUTISM
& NEW
TECHNOLOGIES**

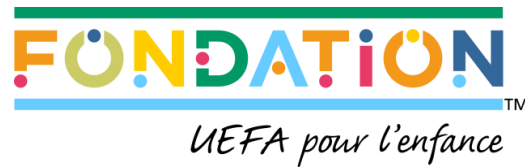
**FEEDBACK ON DIGITAL USE
BY PARENTS, PROFESSIONALS
AND CHILDREN WITH ASD**

INTER-COUNTRY REPORTS



école d'études sociales et pédagogiques · Lausanne
haute-école de travail social et de la santé · Vaud

A project supported by:



The UEFA Foundation for Children aims to help children and defend their rights through sport and football in particular. In addition to defending children's rights, the Foundation provides support to children in the fields of child health, education, access to sport, personal development, and minority integration. A non-profit organisation under Swiss law, the Foundation was officially launched on 24 April 2015.

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- 1/ Selecting and financing disability-focused applied research projects, thanks to its annual call for projects
- 2/ Coordinating the Applied Research and Disability Resource Centre. The Resource Centre is a collaborative space that encourages knowledge sharing of applied disability research. It aims to ensure that those active in the field are able to use disability research¹ by taking into account their needs and expectations, promoting new applied research projects, and communicating and valorising project results.



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¹ **Field stakeholders** : Persons with disabilities, their families, and the organisations that represent persons with disabilities. Human rights organisations. Service providers and other organisations that operate in the disability field. Services and other organisations that are not disability-specific but that must take into account persons with disabilities in their everyday activities, such as teachers, architects, corporations, industries etc. Political decision-makers at the local, national and international level.

In partnership with:



Autism-Europe aisbl (www.autismeurope.org) is an international association whose main objective is to advance the rights of people with autism and their families and to help them improve their quality of life. It ensures effective liaison among almost 90 member autism organisations in from 38 European countries, including 27 Member States of the European Union, governments and European and international institutions. Autism-Europe plays a key role in raising public awareness, and in influencing the European decision-makers on all issues relating to the rights of people with autism. Self-advocates and parents play a central role in our organisation to ensure that the views and interests of persons with autism are adequately reflected in our work. We are also regularly consulted by the World Health Organisation (WHO) and cooperate with the United Nations (UN).

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The Autism and New Technology Program

An action-research project has been launched by FIRAH, and is being conducted by INSHEA, the University of Mons and University of Paris Sud-Créteil, the National Autistic Society, the Haute Ecole de Travail Social et de la Santé (EESP | HES-SO), and the Foundation Autism Luxembourg.

This three-year collaborative programme is an opportunity to share knowledge and practices concerning the use of new technologies for children with Autism Spectrum Disorder (ASD), aged from 2 to 18 years.

The project has three major themes:

- Improve access to educational material and equipment developed with new technologies and adapted to specific needs for children with ASD and their families, such as robots or tablets.
- Increase awareness and train families and professionals in the best support for children with ASD in their use of new technologies. Guidebooks are available to families and professionals.
- Design and carry out applied research projects on the needs and expectations of children with ASD and their families, and provide concrete answers for their daily needs. This means evaluating the impact of the use of new technologies on children with ASD, to improve available material and applications. The approach is participatory, involving the children, parents and professionals working alongside the researchers.

Online questionnaires were given to children and adolescents with ASD, to their parents, and to professionals working with these children on the use of new technologies. The aim was to gather feedback on the use of new technologies. The questionnaires included questions on the digital tools and method of use, the different areas (educational, communication, logic...) in which they were used, appropriation, and specific questions on verbal communication and social interactions. The questionnaires were filled in by 111 professionals, 137 parents, and 90 children or adolescents with ASD, from Belgium, France, Luxembourg, United Kingdom and Switzerland.

Online questionnaires were given to children or adolescents with ASD, as well as parents and professionals supporting these children or adolescents in their use of new technologies. The purpose was to gather information on the use of new technologies. The data was then used to issue one report per country. A summary of the most relevant results for all 6 countries was then drafted. Two hands on and pragmatic educational tools complete the reports, one focusing on applications used and the other on difficulties overcome. These documents are aimed at a wide audience: children, adolescents and professionals (educators, teachers, professors, speech therapists, psychologists, doctors, etc.), as well as researchers and others interested in new technology and autism.

This document provides a brief overview of the answers to some of the questions asked in the questionnaires, all countries combined. It is followed by information provided by children with ASD, as well as parents and professionals, in response to the questionnaires; answers have been categorised by theme. This document complements the reports drafted by each country.

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METHOD

This summary is based on answers to questionnaires completed by children, parents and professionals in the 6 countries in which the study was conducted. The summary focuses on three specific fields:

- benefits and limitations of digital tools
- tips for using these tools
- problems using these tools.

1. Contact with respondents, methods used

Contact with questionnaire respondents varied depending on the country:

- Questionnaire link sent directly by email to directors of educational institutions, who then forwarded the link to respondents or printed and distributed the questionnaire
- Questionnaires sent to an intermediary contact for educational institutions and service providers. Each director was asked to provide the information to the children, parents and professionals involved in their institution

In some countries, the working group member was present when the tests were completed by respondents in order to be able to answer questions.

When answers were completed on a paper questionnaire, the working group member subsequently entered the answer on the Lime Survey application.

2. The questionnaire

The questionnaire has 7 parts:

1. **Description of 5 digital tools:** Respondents were invited to describe the digital tools they use (maximum of 5). The questions focused on: the context of use, method of use, duration (since when and how often do they use the tool), and what respondents appreciate and don't appreciate about the tool.
2. **Digital tools to develop specific skills:** Respondents were invited to describe the tools used to develop skills in the following areas: communication, spatio-temporal awareness, education, social scenarios, practical and everyday life, vocabulary acquisition, sorting-classification-categorisation-logic; creativity; fine motor skills; games and leisure; rewards.
3. **Mastering digital tools and difficulties:** Questions in this section focused on usage problems and difficulties. This was primarily a case of detailing any problems encountered, how they occurred and any solutions identified.
4. **Non-verbal communication and social interaction:** Specific questions focused on the use of new technology in these two areas. Initially respondents were asked to describe the main difficulties encountered in these areas. In the questionnaire for children, questions were addressed directly to the children, whereas parents and professionals were asked to describe their child or the child they were supporting. Subsequent questions focused on the digital tools used to develop these skills. Finally, respondents were asked to identify potential risks related to the use of these types of tools and any different uses they could envisage for the future.
5. **Socio-demographic data:** respondents were invited to provide the following information: age, gender, profession.

3. Number of questionnaire respondents

The questionnaires were completed by 111 professionals, 137 parents and 90 children or adolescents with ASD from Belgium, France, Luxembourg, Ireland, the United Kingdom and Switzerland.

4. Analysis of results

Data was analysed descriptively on the basis of 3 guides (one for the child questionnaire, one for the parent questionnaire, one for the professional questionnaire: see appendices).

Additional information on the data gathering method and questionnaire answers specific to each country may be found in the national reports.

5. Limitations of the study

Study results must be interpreted with certain precautions. The sample size for children, parents and professionals is small. The sample needs to be widened in order to ensure better representation. Also, respondents had a number of criticisms for the questionnaire. They noted for example that questions were too complex, too long and too numerous, and that there were difficulties differentiating between "non-verbal communication" and "social interaction". As the questionnaire was long, respondents sometimes did not answer questions, particularly open questions. Also, the children who responded had excellent expressive and receptive language skills. The children sample is therefore not representative. Parent and professional participation was voluntary: those who answered the questionnaire were those who wanted to take the time to do so.

BENEFITS AND LIMITATIONS OF DIGITAL TECHNOLOGY

In terms of the benefits and limitations of digital tools, we will focus specifically on the two tools most frequently cited in questionnaire responses: tablets and computers (laptops are included in the computer category).

1. Tablet

1.1. *Benefits*

Children

Children like tablets because they are easy to use (6 answers), portable (3 answers), visually pleasant (3 answers) and can be used independently (3 answers). Children can watch videos on tablets, especially on YouTube (5 answers). There are a lot of apps (3 answers). Children also like a number of games (3 answers), the fact that they can search for information (3 answers) and learn (3 answers)

Parents

Parents like tablets as they are easy to use (6 answers), portable (6 answers) and can be used independently (5 answers). Tablets are considered a useful learning tool (7 answers). There is a wide range of applications (5 answers). Tablets are also a means of interacting with other people (6 answers).

Professionals

Professionals particularly appreciate that tablets are portable (14 answers). Tablets are considered easy to use (15 answers); they cite the variety of apps (9 answers); it's a multifunctional tool (4 answers). Independent use (5 answers), appeal (8 answers), and personalisation of the tool (5 answers) are frequently cited. Tablets are considered intuitive (4 answers), playful (6 answers) and visually stimulating (4 answers).

1.2. *Limitations and problems using these tools.*

Children

Children do not cite many problems with tablets: need for an internet connection (3 answers), short battery life (2 answers), glitches (2 answers).

Parents

Parents most often cite the potential addiction to the tablet (7 answers).

These tools may also reinforce the child's isolation (5 answers)

Another risk that worries families is that their children can access inappropriate content on the Internet, particularly on YouTube (3 answers).

The battery life is considered insufficient by some parents (3 answers)

Professionals

The tablet is a fragile tool (8 answers) It is expensive (5 answers), and intrusive advertising appears when in use (4 answers). Tablets are difficult to use in the beginning (4 answers).

2. Computer

2.1. *Benefits*

Children

Children's favourite activity is watching videos and films, for example on YouTube (6 answers). They also conduct Internet searches (5 answers), play games (4 answers) and look at photos (3 answers). Some children like the computer because they find it easy to use (3 answers), it allows for a wide range of activities (4 answers) and is highly visual, with lots of colours (3 answers).

Parents

Parents underline the importance of the computer for learning (7 answers) and appreciate how easy it is to use. It is used to watch videos (4 answers).

Professionals

Professionals cite a range of benefits: interesting for learning (2 answers), useful for browsing the Internet (5 answers). The computer is motivating (4 answers) and certain applications can be configured to the user (3 answers).

2.2. *Limitations and problems using these tools.*

Children

Children do not cite many problems: using the mouse (2 answers), battery life issues (2 answers), fragile equipment (2 answers).

Parents

Parents indicate that their children need to be constantly supervised (4 answers) and that some children may become addicted (3 answers).

Professionals

Professionals cite problems with the mouse (3 answers), and slow Internet browsing (2 answers). Other aspects are cited, each by one professional: impossible to carry the computer, battery life issues, etc.

TIPS FOR USING DIGITAL TOOLS DISCOVERED BY CHILDREN WITH ASD, THEIR PARENTS AND PROFESSIONALS

The following is a thematic summary of tips discovered by users. All tips identified are listed in Appendix 1.

1. Children

1.1. Technical tips (equipment)

Several children discovered technical tips to optimise their use of technology. Sometimes problems are resolved by turning the device off and on again, by restarting the computer. Some children were also able to get non-functional devices to work, for example by re-positioning cables that were poorly connected.

1.2. Tips to simplify the use of devices and applications

Respondents also discovered tips to simplify the use of devices and applications. Keyboard shortcuts are specified by several children with ASD. Some indicate that they can configure applications, modify the pictures. Others also know how to carry out automatic searches using search engines. Children are also able to find tips that they use for their video games, particularly by watching YouTube videos.

1.3. Call for external help (family, resource person)

When unable to find solutions to technological difficulties, they ask for help from their parents for the most part, and to a lesser degree their brothers and sisters or outside persons, such as technology store personnel. One child indicates awareness of the safety rules for social media, such as not sharing personal details.

2. Parents

2.1. Tips for the child's environment

Some tips discovered by parents of children with ASD are specific to managing the child's environment. Several use a time timer in order to limit use of the digital tool, and particularly tablets, in order to avoid the child spending too much time on the device. Icons are also used to indicate behaviours expected with the digital tool.

Some encountered problems having their children work on one type of application, for example learning apps; others have a hard time ensuring their children do not spend too much time using the digital tool. These parents use a time management system, such as 30 minute tokens, in order to limit their children's use of technology.

2.2. *Technical tips*

Parents were also able to resolve certain technical problems; they are also hyper-aware of having the device fully charged. This is because behavioural problems can surface in children with ASD if the device runs out of battery.

2.3. *Judicious choice of equipment*

Parents found touchscreens to be a good investment choice: they enable children to use the tool independently, which was not possible with a mouse-operated computer. Parents also indicated that protective cases lessened the damage suffered by the tablet.

2.4. *Security*

Some parents also discovered security tips, which include the use of passwords, blocking certain sites, and using YouTube Kids with safety mode enabled.

2.5. *Finding adapted applications, learning as a parent*

Parents try to find good applications that meet their child's profile, which can take a considerable amount of time. They may also want to personally familiarise themselves with the use of these digital tools.

2.6. *Interventions with the child*

For some parents, direct intervention with the child is itself a tip, a strategy. It is a question of encouraging the child when the child uses new technology, making the child responsible for updates, for remembering access codes, for typing certain words in order to access websites.

3. Professionals

3.1. *Digital tool management*

Most professionals preferred tablets. A child with ASD is unable to exit the application chosen by the professional, whereas children spontaneously tend to do so. Similarly, codes may be entered on communication applications to prevent the child from exiting the application. Again, in the interest of keeping children on the application selected by the professional and not simply engaging in their own activities, the use of two tablets is mentioned. One tablet to be used for work, the other for leisure.

3.2. *Child's independence/presence of the adult*

Professionals have to address the dilemma of encouraging the child's independence with the digital tool versus the need to have an adult supervising the child whilst using the digital tool. Some think that it's important to ensure that the child doesn't have the tool at his or her full disposal. Other professionals on the contrary encourage independence, for instance by allowing children to turn on the tablet themselves.

3.3. *Time management*

Like parents, professionals consider managing time spent using the digital tool essential. Professionals use a time timer to limit use of the digital tool, show icons to ensure the child does not hurry to click or point just anywhere on the screen. Professionals consider it equally important to structure activities using the digital tool, for example to indicate the time allowed to use the tool, and sometimes allow the child to use his or her preferred app at the end of the session.

3.4. *Equipment/Digital tool protection*

At a purely practical level, the use of protective cases helps prevent damage to the tablets.

Other digital use strategies are mentioned, such as a digital stylus for developing fine motor skills

QUANTITATIVE ELEMENTS

Here are the answers provided to three questions by respondents from all countries (other questions/answers are specified in the national reports). The number of respondents that indicated yes or no to each question is indicated.

Do you use digital tools with autistic children/adolescents for social scenarios and/or social skills? (for children: Do you use digital tools for social scenarios and/or social skills?)

Children: 21 yes 41 no

Parents: 29 yes 59 no

Professionals: 42 yes 34 no

Do you use digital tools with autistic children/adolescents for games and leisure? (for children: Do you use digital tools for games and leisure?)

Children: 65 yes 2 no

Parents: 82 yes 9 no

Professionals: 63 yes 13 no

Do you use digital tools with autistic children/adolescents for education (reading, writing, mathematics, etc.)? (for children: Do you use digital tools for education (reading, writing, maths, etc.)?)

Children: 40 yes 23 no

Parents: 55 yes 37 no

Professionals: 58 yes 22 no

Digital tools are predominantly used for leisure activities by all three categories of respondents, children, parents and professionals. This is surprising given the use by professionals (even if the tool is used for educational purposes by a large proportion of professionals). Several applications explicitly address social scenarios in order to develop

social skills, skills that are lacking among children with ASD. Nevertheless, respondents hardly use digital tools to develop this type of skill.

APPENDIX

Appendix 1. Verbatim answers to a number of the questions presented to children with ASD, parents and professionals

Appendix 2. Questionnaire to collect the experiences and opinions of professionals

Appendix 3. Questionnaire to collect the experiences and opinions of parents of children and adolescents with autism

Appendix 4. Questionnaire to collect the experiences and opinions of children and adolescents with autism

Appendix 5. Report on professionals

Appendix 6. Report concerning parents of children and adolescents with ASD

Appendix 7. Report concerning children and adolescents with ASD

Appendix 1. Verbatim answers to a number of the questions presented to children with ASD, parents and professionals

The following section provides verbatim answers to a number of the questions presented to children with ASD, parents and professionals.

These answers have been classified into different categories, in the interest of clarity and readability.

Children

Technical tips (equipment)

- Charge + type on it!!
- Network connections sometimes impossible. In the event it freezes, I wait for the connection to work again.
- I play the PS4 and there were more images on the TV. I checked and the cables weren't installed correctly. I disconnected it and I managed
- I turn it off.
- I know how to charge the laptop and smartphone.
- The tablet is difficult. I try to restart, close the app and open it
- The iPhone is sometimes too slow.
- The PC had a problem, I found the cause of the error and it was repaired by a professional.
- I restart the computer
- PlayStation 2 (all I did was bang on the top of it and it started to work again)
- When my mobile isn't charged I charge it.
- When my computer overheats, I put an object on the table to get air
- If Spotify freezes, I click twice on the "next" button and it works.
- If there's a problem, it's important to always find the source of the error.
- Some times when it freezes, when that happens I turn it off and on again or seek help
- Sometimes it is slow and I have to wait or I turn it off and on again
- Sometimes two of the laptops can't connect to the internet I usually update the time or turn off the Wi-Fi , wait 30 seconds and that usually works
- Spyware on my computer that's invisible in the files, I had to isolate my files by launching a programme specially designed for removing spyware.
- There are times when the antivirus doesn't work. I turn the computer off and on.

Tips to simplify the use of devices and applications

- Go on YouTube to find tips for games
- ctrl + alt + del ctrl + alt + Q Alt + Tab
- In the event it freezes, I play with non-digital games: Lego, puzzles, drawing, ball

- I know plenty of tips to modify the photos and parameters
- I know how to type a few words to access my favourite sites.
- I use some apps instead of Safari because they use less battery power.
- Keyboard shortcuts Like Control V and Control, voice control.
- Keyboard shortcuts mods
- Keyboard shortcuts text effects swipe left/right voice control mods
- Keyboard shortcuts. Text effects. Accessing your device/swipe left or right.
- Keyboard shortcuts texts effects swipe left/right voice control
- The number of fps I deactivate the useless options I decrease the view distance
- Desktop shortcuts
- Mum installs shortcuts on the PC
- Nick play sometimes doesn't load the games properly. I play another activity on the app that does work.
- No, but sometimes yes I use several computer shortcuts in order to see which shortcut can be used and therefore determine the source of the failure, and the repair method needs to be adapted to the failure identified.
- Press Circle/Square in apps to backwards
- Desktop shortcuts
- Automatic search (link or pre-recorded messages show up in the search engine)
- Search for single applications as well as various Internet searches.
- Use the safety shortcut in the event a window freezes by using the second screen
- you can go underground in Minecraft and you can dig up and you can see somewhere

Call for external help (family, resource person) *Ask parents for help*

Ask parents for help

- Ask my Mum for help
- I call my parents
- When the phone turns off, I give it to my Mum to turn it back on.
- I try and find the source of the problem, then I talk about it with my Dad and we either repair it or a specialist repairs it.
- I get frustrated or I ask for help from my parents.
- No, when there's a failure, I ask Mum and Dad.
- Yes, then I ask my brother or parents for help
- If it doesn't work I call my Dad.
- Network failure --> call parents
- Yes the controllers, the TV when I connect it, I call my dad or I figure it out and I find the problem

Ask brothers and sisters for help

- I ask an adult or my brother for help.

- Yes. Get frustrated; ask for help from siblings;

Ask adults (family not indicated)

- Ask someone older to help
- It's sometimes difficult when you have to write what you're looking for. If I need to I ask an adult for help.
- Sometimes there are problems with the computer. We go to Mediamarkt (Belgian technology shop) to see what the problem is (a virus maybe?).
- I ask an adult for help (2)
- I ask for help.
- I go to see an adult to get help.
- A few freezes and I hand the iPad to an adult
- sometimes try to sort it out then seek help

Environmental conditions

- If I have free time, it works better.
- Auditory stimuli (non-controllable and external) to which I'm highly sensitive.

Security rules

I know security rules for social media interaction (not giving personal information, etc.)

Parents

Tips for the child's environment

- 30min tokens given at the beginning of each week to control iPad obsession, which the child manages him or herself throughout the week
- Time management (2)
- Dependency Solution: 30min tokens given at the beginning of each week to control the obsession
- The company that manages the Tiwouh programme is highly responsive and available to address/resolve problems.
- Limiting time to increase the value of reinforcement. Independence objectives: 3 times 45 minutes
- Limit use and time (Time timer)
- Use a timer to ensure the child stops (doesn't always work)
- When he or she refuses to work on the tablet, I ask his/her language therapist to do it. My child accepts it better at the therapist's than at home because s/he can't access his/her play tablet.
- Such as "we'll do game xyz then you can watch 1 video on YouTube". It works sometimes.
- Time timer -icons to show good behaviour

- Use of Time timer to limit time spent before the screen

Technical tips

- Before the tablet era, our child wanted to use the computer but couldn't use the mouse. We have installed a touch screen which has enabled our child to be almost fully independent.
- In the event of failures or freezes we look for a solution (not always easy for our child to apply and understand)
- Big protective case, time limited.
- We only charge the devices at night. If the battery is dead, he can't play anymore that day. He accepts this very well.
- Make sure there's a sufficient battery charge

Actions for the child

- Encourage the child
- Encourage the child's responsibility for updates and no longer seeing the crises so that he gets used to not always everything
- Our child has big problems with reading, so often technical problems are due to the fact the he doesn't read the PC instructions or is very impatient and repeatedly hits the same button to make the computer or tablet work faster, which of course causes it to freeze. Today, he has to read and calm down before calling us for help, otherwise we don't intervene. And it works! He's starting to get interested in reading.
- Required to remember and type in an access code, required to type in some words to access his websites

Security

- You tube kids = secure access (cannot land on any random video).
- put blocks on certain websites passwords for apps that you want them to use in certain situations
- We have blocked some sites/subjects - we use a timer to limit the time

Finding adapted applications, learning as a parent

- Downloading educational applications
- Personal familiarisation with how this type of tool functions.
- I do a lot of research on apps to find which ones are best suited to us.

Professionals

Digital tool management

- In communication we use GOTALK and therefore can lock it and prevent the child from leaving the page.
- Guided access (app block + timer)
- Guided access on the iPad (the child cannot leave the app)
- Guided access, activity containing elements appreciated by children
- With the use of guided access
- With the GO TALK app, you can install a code to avoid the child being able to leave the app.
- Need to have a "game" tablet and an "educational" tablet
- Lock the tablet on the application in use
- Lock the iPad on the app. Lock the Wi-Fi. Lock the screen on the app selected by the educator.
- Some parents use 2 tablets, one for leisure and one for work
- Wi-Fi in order to optimise use of the apps rather than for the Internet
- Create your own resources
- Create YouTube watchlist. Save songs etc. onto an account to watch again and again.
- In the Escapadou app introduce the list of words to work on.
- Uninstall then reinstall the app
- Available on the iPad: guided access, restrictions, locked screen, etc.
- I have found out how to put restrictions on an iPad to keep it on a...
- Learned better ways of using the whiteboard - split screens; changing what is shown on the monitor
- Locked into one app
- When the iPad is used as a communication tool, I only use it for that and I lock the app, without which children are constantly drawn to other apps.
- Need to disable web
- Need to have separate iPad/tablet which is colour coded for use of communication only
- We have found a guided access parameter on the tablet
- We block exiting the app with a code on the iPad thanks to iPad parameters (accessibility).
- Pressing control and 'c' or 'v' etc.
- Shortcuts linking devices
- On the iPad you can lock an app so that you can't exit it
- Use of guided access: <https://support.apple.com/fr-fr/HT202612>
- Use different iPads to work/play.
- Use guided access, use the restrictions

- Create visual supports
- Use guided access, the restrictions offered by Apple...

Child's independence/presence of the adult

- Creating model examples
- It's important to ensure the child doesn't have free use of the tool.
- In order for the iPad to be used for educational purposes a professional needed to supervise its use as when left to work independently the child would often attempt to access you tube videos.
- The adult's presence ensures that the child cannot leave the app and just play. Alone, the child does not have control over all the apps and we are confronted with the fact that the child does what s/he wants.
- Allow the child to turn on the tablet and open the programme him or herself. Encourage the child's autonomy with the tool to the maximum of the child's abilities.
- For tactile use of the tablet, some students need a teacher to be constantly present in order to successfully master the tool.
- Video evidence of work

Time management

- "Contract" for computer use. Sometimes it's used to reinforce another small activity.
- Use a timer for leisure time -
- Attach a large icon "wait" not included in the app on the screen to differentiate requests
- Use time management
- Loading slowly - refresh page Not working as expected - talked to the students to explain not their fault.
- We use the Timer in addition.
- Icon of activities in advance. Tablet with timer for this activity
- Possible to block the time to ensure the child use the app for at least 5 minutes
- Offer the preferred app at the end of the session or during free time (for example: waiting in the cloakroom)
- Structure activities
- Structure: say from the outset 1 single game or 2 minutes, etc.
- timers
- A time timer to limit use

Equipment/Digital tool protection

- Add cases, protectors, cords, etc.
- Charging batteries
- Check cable for screen, play around with remote control for projector

- Protective cases
- A cord on the iPad case to keep it around the neck
- Fragility = survivor case

Other

- Real working stylus for fine motor skills with exercises
- Practising using them beforehand and regularly. Not a trick, but it has helped.
- Learning functionality
- In terms of mastering difficulties, colleagues' help and advice are essential
- Using Smart Board - used YouTube tutorials
- Anticipation preparation of the tool before use

Theme 1 of the "autism and new technologies" project.

"Testimony" report per country

Country:

Member of the working group:

Appendix 2. The questionnaire to collect the experiences and opinions of professionals

The questionnaire to collect the experiences and opinions of professionals

This questionnaire is intended for professionals working with children and teenagers with autism and the use of new technologies. It aims to gather testimonies about the use of new technologies by children and adolescents.

These testimonies will be used to draft a country report (to be written by a member of the Working Group) and subsequently a comprehensive report to be written by the working group coordinator. The reports will summarize the contents of the testimonies.

These reports will be widely disseminated to a broad audience, in particular to children, adolescents, professionals (social workers, primary and secondary school teachers, speech therapists, psychologists, physicians, etc...) as well as researchers and anyone else interested in the area of new technologies and autism.

After the completion of the reports, the working group will determine if it would be appropriate to produce scientific paper.

These testimonials can also be exchanged via a digital platform accessible through the Internet. Ultimately, they will also be used to develop observation and assessment charts, which will be distributed to project participants (children/teenagers, parents, professionals) and used in 2 stages (Pre and post-test).

In consideration of the information provided above, I accept to respond to the current questionnaire YES/NO

The terms “digital tools” and “new technologies” refer to digital tablets, computers with software and applications that allow for access to the Internet and other similar materials that incorporate a tablet into an object (such as a table).

Please respond to the questions that follow.

Questionnaire for professionals

Digital tools used with the child(ren) or adolescent(s)

What digital tools and software/ applications (if software or application, specify on which digital tool it is used - e.g. communication application on digital tablet) you use with the children and adolescents with whom you work? Specify the context and objectives of use, frequency and customization possibilities in the table below.

Digital Tool/Application	
Context for use and objectives	

<p>If used only at school or the institution what is the goal?</p> <p>If used with a minority of the children and adolescents, both within the family and the school/institution; and for others only while on school /institution premises what is the goal?</p> <p>If used with a majority of children and adolescents, both within the family and the school/institution and for others only in school/institution what is the goal?</p> <p>If used with all of the children and adolescents, both within the family and the school/institution what is the goal?</p>	
<p>Who owns the digital tool, the family, the child or the institution?</p> <p>The school/institution exclusively</p> <p>In a small number of cases, the family owns the tool; most digital tools are the property of the school or institution.</p> <p>In the majority of cases, the family owns it; a small portion of tools are owned by the school or institution.</p> <p>The only owners of the tools are the families of the children and adolescents.</p>	
<p>How long have you been using this tool in a professional setting ?</p>	
<p>Frequency of use</p> <ul style="list-style-type: none"> - everyday - several times a week - once a week - less than once a week 	
<p>The tool is used:</p> <p>1) by an autistic child or adolescent on his or her own</p>	

2) by an autistic child or adolescent and a professional at the same time	
3) by several autistic children/adolescents at the same time	
Customisation features - configurable - pictures/images can be saved onto the tool - other (specify)	

The same style of table may be added when necessary

I like/I do NOT like

Please describe a maximum of five things that you like about the digital tool or application

Please describe a maximum of five things that you do NOT like about the digital tool or application

Are there combinations of several digital tools and/or applications that are used to develop specific skills?

YES/NO

If “yes”, please explain

What are the favourite applications (or software) of the children/teenagers with whom you work (list a maximum of five)? (If possible provide the name of the website or publisher).

Which applications or software (list a maximum of five) do you find the most interesting in a professional context, with children/adolescents with autism?

(If possible provide the name of the website or publisher).

Do you use digital tools with children and/or adolescents with autism for/to: (?)

Communication (increased communication, pictograms, etc.): YES/NO

space-time references (time, timer, visual diary, ...) YES/NO

school (reading, writing, mathematics, etc.) YES/NO

social scenarios/social skills YES/NO

practical life daily (learning to dress, wash, etc.) YES/NO

learning vocabulary YES/NO

sorting, classification, categorization, logic YES/NO

creative activities (drawing, music, ...) YES/NO

fine motor skills, dexterity YES/NO

games and leisure YES/NO

rewarding and reinforcing behaviour YES/NO

Is it sometimes difficult to use the tool in a way that does not correspond to the child's preferred use (example: you want to develop skills with a tablet, but the child wants to use it to play games)?

YES/NO

If "yes",

Provide examples.

Appropriation of digital tools

During the course of the study have you progressively identified uses that are problematic?

YES/NO

If "yes",

Provide examples.

Have you learned any tricks or shortcuts that have helped you to use digital tools better?

YES/NO

If "yes",

Provide examples.

Please list the learning and technical problems (breakdowns, difficulty in mastering the tool, etc.) that you have encountered, with each digital tool.

Did these problems affect the child's or adolescent's learning?

YES/NON

Have you encountered problems with digital tools that you have been able to overcome?

YES/NO

If “yes”,

Provide a few examples.

Interest in non-verbal communication

The term “non-verbal communication” refers to any exchange that is not based on words or phrases, but instead on body posture, looks, proxemics, etc.

What are the children/adolescents with whom you work able to do in terms of non-verbal communication (this includes receptiveness and understanding)? On what occasions does they communicate non-verbally? What do they do to communicate non-verbally?

List three difficulties that the autistic children/adolescents with whom you work have with non-verbal communication:

-
-
-

Is there any support provided, in the different settings where the children/adolescents with autism with whom you work find themselves, to help develop non-verbal communication through means other than digital tools (learning activities, sports, non-digital learning aids, etc.)?

YES/NO

If “yes”,

Please explain.

What digital tools, software, and applications are used to develop non-verbal communication skills? How did you find out about them?

Do you find that, in certain respects, the digital tools that you use with autistic children/adolescents hinder non-verbal communication?

YES/NO

If “yes”,

Indicate which tools and explain why.

Are digital tools part of a comprehensive plan to develop non-verbal communication skills?

YES/NO

If “yes”,

Briefly describe the plan.

If “yes”, is this an overarching plan that is followed throughout the different settings that the child finds himself in (schools, home, centre, etc.)?

YES/NO

If “yes”,

Is the progress made in non-verbal communication through digital tools perceivably the same in all of the environments the child/adolescent finds himself in (school, centre, home, etc.)?

YES/NO

If “yes”,

Please explain.

In the future will you use digital tools differently for non-verbal communication?

YES/NO

If “yes”,

Please explain how.

Interest in social interactions

The term “social interaction” refer to exchanges between human beings and can be verbal or non-verbal (gestures, facial expressions, etc.), exchanges during which one person’s behaviour will elicit a response from another person or persons present.

What can the autistic children/adolescents with whom you work do in terms of social interaction?
When do they interact socially? How do they go about it?

List 3 difficulties the child(ren) or adolescent(s) have that keep him (them) from interacting optimally:

-
-
-

Is there any support provided, in the different environments the children/adolescents find themselves in, to develop social interaction skills (excluding digital tools)?

YES/NO

If “yes”,

Please explain.

What digital tools and/or applications do you use to develop social interaction skills? How did you find out about these tools/applications?

Do you believe that in some respects, certain digital tools hinder social interaction?

YES/NO

If “yes”,

Indicate which tools and why.

Is the use of every digital tool/application used to develop social interaction skills part of a comprehensive plan?

YES/NO

If “yes”, briefly describe the plan.

If “yes”, is this an overarching plan that is followed throughout the different settings the children/adolescents find themselves in (school, centre, family, etc.)?

YES/NO

If “yes”, is the progress made in social interaction through digital tools perceivably the same in all of the settings your child finds himself in (school, centre, family, etc.)?

YES/NO

1461b If “no”, please explain.

In the future will you use digital tools differently to increase social interaction skills?

YES/NO

147a If “yes”, please explain how.

Socio-demographic aspects

Information concerning the person who responded to the questionnaire

Country: Belgium – France – Ireland – Luxembourg – United Kingdom - Switzerland

Date of birth:

Profession:

The type of establishment/department you work in:

Information concerning the children/adolescents with autism

Age range of the children/adolescents:

_____ through _____

Diagnosis (autism, ASD, PDD, etc.):

Appendix 3. Questionnaire to collect the testimonies of parents

This questionnaire is intended for the parents of autistic children and adolescents. Its purpose is to gather testimonies about the use of new technologies and children and adolescents with autism.

These testimonies will be used to draft a country report (to be written by a member of the Working Group) and subsequently a comprehensive report to be written by the working group coordinator. The reports will summarize the contents of the testimonies.

These reports will be widely disseminated to a broad audience, in particular to children, adolescents, professionals (social workers, primary and secondary school teachers, speech therapists, psychologists, physicians, etc...) as well as researchers and anyone else interested in the area of new technologies and autism.

After the completion of the reports, the working group will determine if it would be appropriate to produce scientific paper.

These testimonials can also be exchanged via a digital platform accessible through the Internet. Ultimately, they will also be used to develop observation and assessment charts, which will be distributed to project participants (children / teenagers, parents, professionals) and used in 2 stages (Pre and post-test).

In consideration of the information provided above, I accept to respond to the current questionnaire

The terms digital tools and new technologies are digital tablets, computers with software and applications that allow for access to the Internet and other similar materials that incorporate a tablet into an object (such as a table).

Please respond to the questions below.

Questionnaire for parents

The digital tools you use with your child

What digital tools and software/applications (if software or application, specify on which digital tool is it used - e.g. communication application on digital tablet), do you use with your child? Specify the context and objectives of use, frequency and the type of customization that is possible in the following table:

<p>Digital tool /Application</p>	
<p>Context for use and objectives</p>	
<p>How was the digital tool / application introduced into the family / was it purchased on the advice of other users? If so, specify.</p>	
<p>Is your child the only person who uses the digital tool? At home, are there other persons in the family (older sibling, parents) who serve as models to use digital tools?</p> <p>Does the tool facilitate exchanges between the child and his or her parents and/or siblings? Please explain.</p>	
<p>Since when have you been using the tool or application with your child?</p>	
<p>Frequency of use</p> <ul style="list-style-type: none"> -every day - several times a week - once a week - less than once a week 	
<p>The tool is used</p> <p>By your autistic child by him or herself</p> <p>By your autistic child jointly with another adult,</p> <p>By your autistic child jointly with other children</p>	
<p>Customization features</p> <ul style="list-style-type: none"> - configurable - Personal pictures/images can be added - other (specify) 	

The same style of table may be added when necessary

I like/I do NOT like

Please describe a maximum of five things that you like about the digital tool or application (list the digital tool number).

Please describe a maximum of five things that you do NOT like about the digital tool or application (list the digital tool number)

Do you use any other digital tool or application?

Are there combinations of several digital tools and/or applications that are used to develop specific skills?

YES/NO

If yes, please explain

What are your child's favourite applications or software (maximum 5)? (If possible provide the name of the website or publisher)

What are the applications or software (maximum 5) that you find the most interesting for your child? (If possible provide the name of the website or publisher).

You use digital tools with your child for:

communication (enhanced communication, pictograms, etc.) YES / NO

space-time references (time, timer, visual diary, etc.) YES / NO

school (reading, writing, mathematics, etc.) YES / NO

practical daily tasks (learn to dress, wash, ...) YES / NO

learning vocabulary (picture books) YES / NO

sorting, classification, categorization, logic YES / NO

creative activities (drawing, music, etc. YES/NO

Fine motor skills, dexterity YES / NO

Games and leisure YES / NO

Rewarding or reinforcing behaviour YES / NO

Is it sometimes difficult to use the tool in a way that does not correspond to your child's preferred use (example: you want to develop skills with a tablet, but the child wants to use it to play games)?

YES/NO

If yes,

Provide a few examples.

Appropriation of digital tools

During the course of the study have you progressively identified uses that are problematic?

YES/NO

If yes,

Provide a few examples.

Have you found any tricks or shortcuts that have helped you to use digital tools better?

YES/NO

If yes,

Provide a few examples.

Please list the learning and technical problems (breakdowns, difficulty in mastering the tool, etc.) that you have encountered, with each digital tool.

Did these problems affect your child's learning?

Have you encountered problems with digital tools that you have been able to overcome?

YES/NO

If yes,

Provide a few examples.

.

Interest in non-verbal communication

What is your child able to do with respect to non-verbal communication (this includes receptiveness and understanding)? On what occasions does he communicate non-verbally? What does he do to communicate non-verbally?

List three difficulties that your child has with non-verbal communication:

-
-
-

Is there any support provided, in the centres or places your child goes to frequently, to help develop non-verbal communication through means other than digital tools (learning activities, sports, non-digital learning aids, etc.)?

YES/NO

If yes,

Please describe.

What digital tools, software, and applications are used to develop non-verbal communication? How did you find out about them?

Do you find that, in certain respects, the digital tools that you use with your child hinder non-verbal communication?

YES/NO

If yes,

Indicate which tools and why.

Are digital tools part of a comprehensive plan to develop non-verbal communication skills?

YES/NO

If yes,

Briefly describe the plan.

If yes, is this an overarching plan that is followed throughout the different settings that your child finds himself in (schools, home, centre, etc.)?

YES/NO

If yes,

Is the progress made in non-verbal communication through digital tools perceivably the same in all of the environments your child finds himself in (school, centre, home, etc.)?

YES/NO

If yes,

Please explain.

In the future will you use differently digital tools for non-verbal communication?

YES/NO

If yes,

Please explain.

Interest in social interactions

Social interactions refer to exchanges between human beings and can be verbal or non-verbal (gestures, facial expressions, etc.), exchanges during which one person's behaviour will elicit a response from another person or persons present.

What can your child do in terms of social interactions? When does he interact socially? How does he go about it?

List 3 difficulties your child has that keep him from interacting optimally:

-
-
-

Is there any support provided, in the different environments your child finds himself in, to develop social interaction (excluding digital tools)?

YES/NO

If yes,

Please explain.

What digital tools and/or applications do you use to develop social interaction skills? How did you find out about these tools/applications?

Do you believe that in some respects, certain digital tools hinder social interaction?

YES/NO

If yes,

Please indicate which tools and describe why.

Is the use of every digital tool/application used to develop social interaction skills part of a comprehensive plan?

YES/NO

If yes, briefly describe the plan.

Is this an overarching plan that is followed throughout the different settings your child finds himself in (school, centre, family, etc.)?

YES/NO

If yes, is the progress made in social interaction through digital tools perceivably the same in all of the settings your child finds himself in (school, centre, family, etc.)?

YES/NO

If yes, please explain.

In the future will you use digital tools differently to increase social interaction skills?

YES/NO

If yes,

Please explain how.

Socio-demographic aspects

Information concerning the person who responded to the questionnaire

Country: Belgium – France – Ireland – Luxembourg – United Kingdom - Switzerland

Your age:

Your profession:

Information concerning the child with autism

Your child's age:

Diagnosis (autism, ASD, PDD, etc.)

Appendix 4. Questionnaire to collect the experiences and opinions of children and adolescents with autism

This questionnaire is intended for children and teenagers with autism, in the use of new technologies. It aims to gather testimonies about the use of new technologies by children and adolescents with autism.

These testimonies will be used to draft a country report (to be written by a member of the Working Group) and subsequently a comprehensive report to be written by the working group coordinator. The reports will summarize the contents of the testimonies.

These reports will be widely disseminated to a broad audience, in particular to children, adolescents, professionals (social workers, primary and secondary school teachers, speech therapists, psychologists, physicians, etc...) as well as researchers and anyone else interested in the area of new technologies and autism.

After the completion of the reports, the working group will determine if it would be appropriate to produce scientific paper.

These testimonials can also be exchanged via a digital platform accessible through the Internet. Ultimately, they will also be used to develop observation and assessment charts, which will be distributed to project participants (children / teenagers, parents, professionals) and used in 2 stages (Pre and post-test).

*In consideration of the information provided above, I agree to respond to the current questionnaire.
YES/NO*

The terms “digital tools” and “new technologies” refer to digital tablets, computers with software and applications that allow for access to the Internet and other similar materials that incorporate a tablet into an object (such as a table).

Please respond to the following questions. The child or teenager with autism will answer on his or her own whenever possible. Alternatively, questions can be asked and reformulated in a language that is understandable to him and the questionnaire can be completed by a professional working with him.

Questionnaire for child or adolescent with autism

What digital tools that you use?

Where do you use this tool or application and what do you use it for?	
Since when have you been using this tool / application?	
Did someone in your family already use this tool? Is there someone in your family who now uses this tool? YES/NO If “yes”, do you talk about it together? Does it facilitate the exchanges between you and others? Please explain your response.	
Frequency of use How often is the tool used? -Everyday -Several times a week -Once a week -Less than once a week	
Customisation features - Configurable - Can use your own pictures or images - other (explain)	

Other, similar tables can be used if need be.

I like / I do NOT like

For the first digital tool or application used, can you list of a maximum of five things, or less, that you like about it?

For the first digital tool or application used, can you list of a maximum of five things, or less, that you do NOT like about it?

Do you use another digital tool or application?

Do you use the same digital tool to do different things (to work, to play, for example)?

YES/NO

If “yes”, please provide examples.

Which applications (or software) do you like best (list a maximum of five)? (if possible, provide the name of the website or publisher).

Indicate what you use digital tools for/to:

communication (augmented communication, pictograms, etc.): YES / NO

space-time references (time, timer visual diary, etc.) YES / NO

school (reading, writing, mathematics, etc.) YES / NO

social scenarios / social skills YES / NO

practical daily tasks (learning to dress, to wash, ...) YES / NO

learning vocabulary (picture books) YES / NO

sorting, classification, categorization, logic YES / NO

creative activities (drawing, music, ...) YES / NO

fine motor skills, dexterity YES / NO

games and leisure YES / NO

Appropriation of digital tools

Have you discovered any tricks or shortcuts that have helped you use digital tools better?

YES/NO

If “yes”,

Provide examples.

Do you sometimes find the tool hard to use? Does it not work sometimes? What do you do when that happens?

Have you already had problems with digital tools that you were able to fix?

Provide a few examples

Interest in non-verbal communication

The term “non-verbal communication” refers to any form of communication that does not use words or phrases, but instead uses gestures, facial expressions, body posture, looks, proxemics, etc.

Do you have difficulty understanding other people's emotions?

YES / NO

If “yes”, explain what the problem is.

Are there activities, in your family or in your school / institution, that help you to understand the emotions of others better?

YES/NO

If “yes”,

Please describe the activities.

Do some of these activities use digital tools?

YES/NO

If “yes”,

What are these digital tools and describe the activities?

Do you find that the use of digital tools helps you to understand others better?

If “yes”,

Explain how.

Interest in social interactions

The term “social interaction” refers to exchanges between human beings and can be verbal or non-verbal (gestures, facial expressions, etc.), exchanges during which one person’s behaviour will elicit a response from another person or persons present.

Do you have difficulty interacting with others?

YES NO

If “yes”, please explain what the problem is.

Do you have difficulties knowing what to do with other people in certain situations?

If “yes”, please explain what the problem is.

Are there activities, in your family or in your school / institution, to help you learn how to act with other people in certain situations?

YES/NO

If “yes”, please describe these activities.

Are digital tools used for some of these activities? OUI/NON

YES/NO

If “yes”,

If “yes”, *what are these digital tools and describe the activities?*

Do you feel that the use of digital tools helps you to better understand how to behave with others in certain situations?

Socio-demographic aspects

Countries:

Belgium – France – Ireland – Luxembourg – United Kingdom - Switzerland

Age:

Type of institution or unit for children and adolescents with autism:

Appendix 5. Report on professionals

Digital tools and apps used

General diagram with the percentage of each digital tool/app used

For each tool;

Context of use, objectives

diagram with the percentage for the following contexts of use

Solely at school, educational institution

For a minority of children and adolescents, both in the family and school/ institution environments, and for others solely in the school/institution environment

For most children and adolescents, both in the family and school/institution environments, and for others solely in the school/institution environment

For all children and adolescents, both in the family and school/institution environments

objective

Conduct a thematic analysis of the objectives indicated by respondents. Indicate the number of responses by theme. Place excerpts from responses specific to the theme in question between quotation marks.

Property of the child/adolescent's family or the institution?

diagram with the percentage for the following contexts of use

Solely of the school, institution

For a minority of children and adolescents digital tools belong to the family, as most digital tools are owned by the school/institution

For a majority of children and adolescents digital tools belong to the family, as a minority of digital tools are owned by the school/institution?

Solely owned by the families of the children/adolescents

Experience using the tool

Get the average: ex. 3.2 years

Usage frequency

diagram with the percentage for the following contexts of use

every day

several times a week

approximately once a week

less than once a week

Tool mode of use

diagram with the percentage for the following contexts of use

independently by an autistic child/adolescent
by an autistic child/adolescent and a professional at the same time
by several autistic children/adolescents at the same time

Personalisation

diagram with the percentage for the following contexts of use

- Configurable
- Possibility of using your own images/photos
- Other

For the "other" category, regroup what was said by theme and make a diagram with the percentage of the different "other" elements.

What aspects were appreciated and not appreciated for each digital tool/app

Regroup all answers from respondents in your country per tool / app, then for each tool/app, make a list with the following;

At the top of the list, the most appreciated aspect that recurred most frequently, and in brackets the number of people who indicated this aspect, followed by the 2nd most cited and its corresponding number of people who indicated this aspect, etc. until aspects that were only cited once are specified at the bottom of the list.

Followed by the same classification of aspects that were not appreciated

Combination of several tools

diagram showing the yes/no percentage

For "yes", create a thematic grouping, indicate the number of responses per theme and cite excerpts that illustrate the themes in question

Apps preferred by children

List indicating: at the top of the list, the app that was most often cited, and in brackets the number of people who indicated this app, followed by the 2nd most cited app listed with the number of people who indicated this app etc. until the apps cited only once are specified at the bottom of the list. Put the site address next to the app publisher if available.

Applications favoured for use with autistic children/adolescents at the professional level

List indicating: at the top of the list, the app that was most often cited, and in brackets the number of people who indicated this app, followed by the 2nd most cited app listed with the number of people who indicated this app etc. until the apps cited only once are specified at the bottom of the list. Put the site address next to the app publisher if available.

Use of digital tools in the fields indicated in the questionnaire

For each item, indicate the percentage of yes and percentage of no using a diagram

Communication (communication reinforced by icons): YES/NO
Spatio-temporal identifiers (time timer, visual agenda ...) YES/NO
Education (reading, writing, maths, etc.) YES/NO
Social scenarios/social skills YES/NO
Practical everyday life (learn to get dressed, washed, etc.) YES/NO
Vocabulary training (picture dictionary) YES/NO
Sorting, classification, categorisation, logic YES/NO
Creativity (drawing, music, etc.) YES/NO
Fine motor skills, dexterity YES/NO
Games and leisure YES/NO
Rewards (reinforcement) YES/NO

Difficulty of using tools in a way that doesn't correspond to the child's preferred use
Diagram with the percentage of yes and no

Examples

Create a thematic grouping, indicate the number of responses per theme and cite excerpts that illustrate the themes in question

Appropriation of digital tools

Problems using these tools

Percentage of yes and no

For "yes", create a thematic grouping for projects, indicate the number of responses per theme and cite excerpts that illustrate the themes in question.

Tips for using digital tools

Percentage of yes and no

For "yes", create a thematic grouping for tips, indicate the number of responses per theme and cite excerpts that illustrate the themes in question

Technical problems encountered

Create a thematic grouping for projects, indicate the number of responses per theme and cite excerpts that illustrate the themes in question

Incidence on learning

Percentage of yes and no

Problems overcome

Percentage of yes and no

For "yes", create a thematic grouping for problems overcome, indicate the number of responses per theme and cite excerpts that illustrate the themes in question

Non-verbal communication

Ability of children/adolescents to communicate non-verbally

Create a thematic grouping, indicate the number of responses per theme and cite excerpts that illustrate the themes in question

Non-verbal communication difficulties

Create a thematic grouping, indicate the number of responses per theme and cite excerpts that illustrate the themes in question

Support put into place to develop non-verbal communication (excluding digital tools)

Percentage of yes and no

For "yes" create a thematic grouping, indicate the number of responses per theme and cite excerpts that illustrate the themes in question

Digital apps/tools to develop non-verbal communication

Applications/tools

List indicating: at the top of the list, the app that was most often cited, and in brackets the number of people who indicated this app, followed by the 2nd most cited app listed with the number of people who indicated this app etc. until the apps cited only once are specified at the bottom of the list.

Method of becoming familiar with the tools

List indicating at the top the method that was most often cited, and in brackets the number of people who indicated this method, followed by the 2nd most cited method listed with the number of people who indicated this method etc. until the methods cited only once are specified at the bottom of the list.

Obstruction to non-verbal communication

Percentage of yes and no

For "yes", create a thematic grouping for reasons for the obstruction, indicate the number of responses per theme and cite excerpts that illustrate the themes in question.

Part of a global project

Percentage of yes and no

For "yes", create a thematic grouping for projects, indicate the number of responses per theme and cite excerpts that illustrate the themes in question.

Project in the child's different living environments

Percentage of yes and no

For "yes", percentage of yes and no in order to know if progress is the same regardless of the environment.

For "no", create a thematic grouping for the explanations given, indicate the number of responses per theme and cite excerpts that illustrate the themes in question.

Future change in use of digital tools for non-verbal communication

Percentage of yes and no

For "yes", create a thematic grouping for forecast uses, indicate the number of responses per theme and cite excerpts that illustrate the themes in question.

Social interactions

Ability of children/adolescents in terms of social interactions

Create a thematic grouping, indicate the number of responses per theme and cite excerpts that illustrate the themes in question

Difficulties surrounding social interactions

Create a thematic grouping, indicate the number of responses per theme and cite excerpts that illustrate the themes in question

Support implemented to develop social interaction (excluding digital tools)

Percentage of yes and no

For "yes" create a thematic grouping, indicate the number of responses per theme and cite excerpts that illustrate the themes in question

Applications/digital tools to develop social interaction

Applications/tools

List indicating: at the top of the list, the app that was most often cited, and in brackets the number of people who indicated this app, followed by the 2nd most cited app listed with the number of people who indicated this app etc. until the apps cited only once are specified at the bottom of the list.

Method of becoming familiar with the tools

List indicating at the top the method that was most often cited, and in brackets the number of people who indicated this method, followed by the 2nd most cited method listed with the number of people who indicated this method etc. until the methods cited only once are specified at the bottom of the list.

Obstruction of social interaction

Percentage of yes and no

For "yes", create a thematic grouping for reasons for the obstruction, indicate the number of responses per theme and cite excerpts that illustrate the themes in question.

Part of a global project

Percentage of yes and no

1.4.6.a For "yes", create a thematic grouping for projects, indicate the number of responses per theme and cite excerpts that illustrate the themes in question.

Project in the child's different living environments

Percentage of yes and no

1.4.6.1.a For "yes", percentage of yes and no in order to know if progress is the same regardless of the environment

1.4.6.1.b For "no", create a thematic grouping for the explanations given, indicate the number of responses per theme and cite excerpts that illustrate the themes in question

Future change in use of digital tools for social interactions

Percentage of yes and no

147a For "yes", create a thematic grouping for forecast uses, indicate the number of responses per theme and cite excerpts that illustrate the themes in question

Socio-demographic elements

Information on the person who filled out the questionnaire

Age

Graph, percentage by age group

Under 30 years/30-39/40-49/50-59/60+

Profession

Graph, percentage by profession

Information concerning children or adolescents with autism

Age

Average age of youngest children

Average age of oldest children/adolescents

Diagnostic

Graph, percentage per diagnostic (autism, ASD, PDD, etc.)

Appendix 6. Report concerning parents of children and adolescents with ASD

Digital tools and apps used

General diagram with the percentage of each digital tool/app used

Context of use, objectives

diagram with the percentage for the following contexts of use

Solely at school, educational institution

For a minority of children and adolescents, both in the family and school/ institution environments, and for others solely in the school/institution environment

For most children and adolescents, both in the family and school/institution environments, and for others solely in the school/institution environment

For all children and adolescents, both in the family and school/institution environments

objective

Create a thematic grouping, indicate the number of responses per theme and cite excerpts that illustrate the themes in question

Arrival of the digital tool/app in the family

How the tool arrived

Create a thematic grouping, indicate the number of responses per theme and cite excerpts that illustrate the themes in question

Bought on the advice of other users?

Percentage of yes and no

For "yes", create a thematic grouping, indicate the number of responses per theme and cite excerpts that illustrate the themes in question

Use by the child and adolescent with autism

Only one to use it?

Percentage of yes and no

Models that encourage use of the tool

Percentage of yes and no

Exchanges between adult and child

Percentage of yes and no

For "yes", create a thematic grouping, indicate the number of responses per theme and cite excerpts that illustrate the themes in question

Experience using the tool

Get the average: ex. 3.2 years

Usage frequency

diagram with the percentage for the following contexts of use

every day

several times a week

approximately once a week

less than once a week

Tool mode of use

diagram with the percentage for the following contexts of use

by an autistic child independently

by an autistic child and the professional at the same time

by several autistic children at the same time

Personalisation

diagram with the percentage for the following contexts of use

- Configurable

- Possibility of using your own images/photos

- Other

For the "other" category, regroup what was said by theme and make a diagram with the percentage of the different "other" elements.

What aspects were appreciated and not appreciated for each digital tool/app

Regroup all answers from respondents in your country per tool / app, then for each tool/app, make a list with the following;

At the top of the list, the most appreciated aspect that recurred most frequently, and in brackets the number of people who indicated this aspect, followed by the 2nd most cited and its corresponding number of people who indicated this aspect, etc. until aspects that were only cited once are specified at the bottom of the list.

Followed by the same classification of aspects that were not appreciated

Combination of several tools

diagram showing the yes/no percentage

For "yes", create a thematic grouping, indicate the number of responses per theme and cite excerpts that illustrate the themes in question

Apps preferred by children

List indicating: at the top of the list, the app that was most often cited, and in brackets the number of people who indicated this app, followed by the 2nd most cited app listed with the number of people who indicated this app etc. until the apps cited only once are specified at the bottom of the list. Put the site address next to the app publisher if available.

Applications preferred by parents with autistic children/adolescents

List indicating: at the top of the list, the app that was most often cited, and in brackets the number of people who indicated this app, followed by the 2nd most cited app listed with the

number of people who indicated this app etc. until the apps cited only once are specified at the bottom of the list. Put the site address next to the app publisher if available.

Use of digital tools in the fields indicated in the questionnaire

For each item, indicate the percentage of yes and percentage of no using a diagram communication (communication reinforced by icons): YES/NO

Spatio-temporal identifiers (time timer, visual agenda ...) YES/NO

Education (reading, writing, maths, etc.) YES/NO

Social scenarios/social skills YES/NO

Practical everyday life (learn to get dressed, washed, etc.) YES/NO

Vocabulary training (picture dictionary) YES/NO

Sorting, classification, categorisation, logic YES/NO

Creativity (drawing, music, etc.) YES/NO

Fine motor skills, dexterity YES/NO

Games and leisure YES/NO

Rewards (reinforcement) YES/NO

Difficulty of using tools in a way that doesn't correspond to the child's preferred use

Diagram with the percentage of yes and no

Examples: create a thematic grouping, indicate the number of responses per theme and cite excerpts that illustrate the themes in question

Appropriation of digital tools

Problems using these tools

Percentage of yes and no

For "yes", create a thematic grouping for projects, indicate the number of responses per theme and cite excerpts that illustrate the themes in question.

Tips for using digital tools

Percentage of yes and no

For "yes", create a thematic grouping for tips, indicate the number of responses per theme and cite excerpts that illustrate the themes in question

Technical problems encountered

Create a thematic grouping for projects, indicate the number of responses per theme and cite excerpts that illustrate the themes in question

Incidence on learning

Percentage of yes and no

Problems overcome

Percentage of yes and no

For "yes", create a thematic grouping for problems overcome, indicate the number of responses per theme and cite excerpts that illustrate the themes in question

Non-verbal communication

Ability of children/adolescents to communicate non-verbally

Create a thematic grouping, indicate the number of responses per theme and cite excerpts that illustrate the themes in question

Non-verbal communication difficulties

Create a thematic grouping, indicate the number of responses per theme and cite excerpts that illustrate the themes in question

Support put into place to develop non-verbal communication (excluding digital tools)

Percentage of yes and no

For "yes" create a thematic grouping, indicate the number of responses per theme and cite excerpts that illustrate the themes in question

Digital apps/tools to develop non-verbal communication

Applications/tools

List indicating: at the top of the list, the app that was most often cited, and in brackets the number of people who indicated this app, followed by the 2nd most cited app listed with the number of people who indicated this app etc. until the apps cited only once are specified at the bottom of the list.

Method of becoming familiar with the tools

List indicating at the top the method that was most often cited, and in brackets the number of people who indicated this method, followed by the 2nd most cited method listed with the number of people who indicated this method etc. until the methods cited only once are specified at the bottom of the list.

Obstruction to non-verbal communication

Percentage of yes and no

For "yes", create a thematic grouping for reasons for the obstruction, indicate the number of responses per theme and cite excerpts that illustrate the themes in question.

Part of a global project

Percentage of yes and no

For "yes", create a thematic grouping for projects, indicate the number of responses per theme and cite excerpts that illustrate the themes in question.

Project in the child's different living environments

Percentage of yes and no

For "yes", percentage of yes and no in order to know if progress is the same regardless of the environment.

For "no", create a thematic grouping for the explanations given, indicate the number of responses per theme and cite excerpts that illustrate the themes in question.

Future change in use of digital tools for non-verbal communication

Percentage of yes and no

For "yes", create a thematic grouping for forecast uses, indicate the number of responses per theme and cite excerpts that illustrate the themes in question.

Social interactions

Ability of children/adolescents in terms of social interactions

Create a thematic grouping, indicate the number of responses per theme and cite excerpts that illustrate the themes in question

Difficulties surrounding social interactions

Create a thematic grouping, indicate the number of responses per theme and cite excerpts that illustrate the themes in question

Support implemented to develop social interaction (excluding digital tools)

Percentage of yes and no

For "yes" create a thematic grouping, indicate the number of responses per theme and cite excerpts that illustrate the themes in question

Applications/digital tools to develop social interaction

Applications/tools

List indicating: at the top of the list, the app that was most often cited, and in brackets the number of people who indicated this app, followed by the 2nd most cited app listed with the number of people who indicated this app etc. until the apps cited only once are specified at the bottom of the list.

Method of becoming familiar with the tools

List indicating at the top the method that was most often cited, and in brackets the number of people who indicated this method, followed by the 2nd most cited method listed with the number of people who indicated this method etc. until the methods cited only once are specified at the bottom of the list.

Obstruction of social interaction

Percentage of yes and no

For "yes", create a thematic grouping for reasons for the obstruction, indicate the number of responses per theme and cite excerpts that illustrate the themes in question.

Part of a global project

Percentage of yes and no

2.4.6.a For "yes", create a thematic grouping for projects, indicate the number of responses per theme and cite excerpts that illustrate the themes in question.

Project in the child's different living environments

Percentage of yes and no

2.4.6.1.a For "yes", percentage of yes and no in order to know if progress is the same regardless of the environment

2.4.6.1.b For "no", create a thematic grouping for the explanations given, indicate the number of responses per theme and cite excerpts that illustrate the themes in question.

Future change in use of digital tools for social interactions

Percentage of yes and no

For "yes", create a thematic grouping for forecast uses, indicate the number of responses per theme and cite excerpts that illustrate the themes in question.

Socio-demographic elements

country:

Age

Graph, percentage by age group

Under 30 years/30-39/40-49/50-59/60+

Profession

Graph, percentage by profession

Information concerning children or adolescents with autism

Age

Average age of youngest children

Average age of oldest children/adolescents

Diagnostic

Graph, percentage per diagnostic (autism, ASD, PDD, etc.)

Appendix 7. Report concerning children and adolescents with ASD

Digital tools and apps used

General diagram with the percentage of each digital tool/app used

For each tool/application:

Context of use, objectives

contexts of use

Conduct a thematic analysis of the usage contexts indicated by the respondents, indicate the number of responses by theme. Place excerpts from responses specific to the theme in question between quotation marks.

objective

Conduct a thematic analysis of the objectives indicated by the respondents, indicate the number of responses by theme. Place excerpts from responses specific to the theme in question between quotation marks.

Experience using the tool

Get the average: ex. 3.2 years

Use in the child/adolescent's family?

Previous use of the tool by a member of the family

Percentage of yes and no

Current use of the tool by a member of the family

Percentage of yes and no

In the event of yes, conduct a thematic analysis of the objectives indicated by the respondents, indicate the number of responses by theme. Place excerpts from responses specific to the theme in question between quotation marks.

Usage frequency

diagram with the percentage for the following use frequency

every day

several times a week

approximately once a week

less than once a week

Personalisation

diagram with the percentage for the following contexts of use

- Configurable

- Possibility of using your own images/photos

- Other

For the "other" category, regroup what was said by theme and make a diagram with the percentage of the different "other" elements.

What aspects were appreciated and not appreciated for each digital tool/app

Regroup all answers from respondents in your country per tool / app, then for each tool/app, make a list with the following;

At the top of the list, the most appreciated aspect that recurred most frequently, and in brackets the number of people who indicated this aspect, followed by the 2nd most cited and its corresponding number of people who indicated this aspect, etc. until aspects that were only cited once are specified at the bottom of the list.

Followed by the same classification of aspects that were not appreciated

Same tool for different uses

diagram showing the yes/no percentage

If yes, conduct a thematic analysis of the uses indicated by the respondents, indicate the number of responses by theme. Place excerpts from responses specific to the theme in question between quotation marks.

Apps preferred by children

List indicating: at the top of the list, the app that was most often cited, and in brackets the number of people who indicated this app, followed by the 2nd most cited app listed with the number of people who indicated this app etc. until the apps cited only once are specified at the bottom of the list. Put the site address next to the app publisher if available.

Use of digital tools in the fields indicated in the questionnaire

For each item, indicate the percentage of yes and percentage of no using a diagram

communication (communication reinforced by icons): YES/NO

spatio-temporal identifiers (time timer, visual agenda, ...) YES/NO

education (reading, writing, maths, etc.) YES/NO

social scenarios/social skills YES/NO

practical everyday life (learn to get dressed, washed, etc.) YES/NO

vocabulary training (picture dictionary) YES/NO

sorting, classification, categorisation, logic YES/NO

creativity (drawing, music, etc.) YES/NO

Fine motor skills, dexterity YES/NO

Games and leisure YES/NO

Appropriation of digital tools

Tips for using digital tools

Percentage of yes and no

For "yes", create a thematic grouping for tips, indicate the number of responses per theme and cite excerpts that illustrate the themes in question

Technical problems encountered

Create a thematic grouping for projects, indicate the number of responses per theme and cite excerpts that illustrate the themes in question

Problems overcome

Percentage of yes and no

For "yes", create a thematic grouping for problems overcome, indicate the number of responses per theme and cite excerpts that illustrate the themes in question

Non-verbal communication

Non-verbal communication difficulties

The child/adolescent says s/he has difficulties understanding others' emotions

Percentage of yes and no

If yes, create a thematic grouping, indicate the number of responses per theme and cite excerpts that illustrate the themes in question

Support put into place to develop non-verbal communication (excluding digital tools)

Percentage of yes and no

3.3.2.a For "yes" create a thematic grouping, indicate the number of responses per theme and cite excerpts that illustrate the themes in question

Use of digital for this support

Percentage of yes and no

For "yes" create a thematic grouping, indicate the number of responses per theme and cite excerpts that illustrate the themes in question

Digital technology's usefulness in understanding others

Percentage of yes and no

For "yes" create a thematic grouping, indicate the number of responses per theme and cite excerpts that illustrate the themes in question

Social interactions

Difficulties surrounding social interactions

The child/adolescent says s/he has difficulties having contact with others

Percentage of yes and no

3.4.1.a If yes, create a thematic grouping, indicate the number of responses per theme and cite excerpts that illustrate the themes in question

The child/adolescent says s/he is having difficulties in being able to act in certain situations with other people?

Percentage of yes and no

3.4.1.1.a If yes, create a thematic grouping, indicate the number of responses per theme and cite excerpts that illustrate the themes in question

Support implemented to develop social interaction (excluding digital tools)

Percentage of yes and no

3.4.2.a For "yes" create a thematic grouping, indicate the number of responses per theme and cite excerpts that illustrate the themes in question

Use of digital for this support

Percentage of yes and no

3.4.2.1.a For "yes" create a thematic grouping, indicate the number of responses per theme and cite excerpts that illustrate the themes in question

Digital technology usefulness in better knowing how to act in certain situations with other people

Percentage of yes and no

For "yes" create a thematic grouping, indicate the number of responses per theme and cite excerpts that illustrate the themes in question

Socio-demographic elements

Country

Age

Graph, percentage by age group

Less than 5 years old/5-9/10-14/15-19/20+

Type of institution/service for the autistic child/adolescent

Percentage by type