3 HOW TO RATE

A tutorial on how to rate digital products with regard to the BETA framework for evidence-based practice for technology for autism.

In order to create the evidence-based practice framework, we conducted a participatory study with autistic people, families/carers, relevant professionals and researchers.

To understand how the framework works, you'll need to understand the definitions of aspects of technology, sources of information and levels of evidence listed below.

KEY ASPECTS OF TECHNOLOGY

• **Reliability** is defined as the efficacy of a product at the level of engineering. Is it technically sound/functional? How well does it work? e.g. Does their face recognition functionality actually work? Does the app crash often?

• **Engagement** is defined as the user perception of the technology. How usable, pleasant and accessible is the product for the specific users? Its ease of use / look & feel.

• **Effectiveness** is defined as the outcome of using the product. How much impact does it have to the people using it? Does it make an observable difference in the user's life/behaviour?

SOURCES OF INFORMATION FOR THESE ASPECTS OF TECHNOLOGY

• **Try it out:** A trial version is available. Its functions can be explored. Whether it is motivating to use in the short/medium/long term can be evaluated. It is clear how the trial version differs from the full version.

• **Expert/Professional opinions:** Opinions about the product have been made by experts (for example, autistic people or other people with specialist skills and relevant experience with technology), relevant professionals (for example a specialist teacher, speech and language therapist, specialist psychologist, etc.), or relevant organisations/agencies (for example an autism society).

• **Online reviews:** Review websites and social media groups contain information about the product. Reviews from autistic users and their families have been included. People having used the product for a (relatively) long time have expressed their views. Many reviews are available for comparison to improve objectivity.

• **Academic/scientific research:** Academic/scientific outputs (journal articles, online information, talks) evaluating the product are available and the quality of the research can be established (e.g. journal articles have been peer-reviewed, or analysed in a way that systematically combines the results from multiple independent studies). The academic's or scientist's relevant qualifications, affiliations and potential conflicts of interest can be reviewed.

LEVELS OF EVIDENCE FOR EACH SOURCE OF INFORMATION

- **Complete** means there is high quality available evidence on all (or mostly all) of what is needed.

- **Adequate** means there is high quality evidence on some of what is needed, or adequate quality evidence on all (or mostly all) of what is needed.

- **Limited** means there is adequate quality evidence on some of what is needed, or limited evidence for all (or mostly all) of what is needed.

- **None** means there is no, or not enough, evidence. This includes 'don't know', if you are unaware of any evidence.

To show you how to apply the framework, we'll walk you through an example of how to assess the evidence for the Reliability aspect of your chosen product.
First go to this page to find the tool **beta-project.org**

1) TRY IT OUT

Try to find a way to give the product a **try** to assess if its functionalities work properly, if there are serious glitches and if so, if there is support from the development team.

To do that you could for example

- Request a trial version from the company. Check on the company's website as many offer trial versions for a limited time.

- If the company doesn't offer that option, you could try it out on a friend's or colleague's device.

- If they are a hardware company e.g., robots, you could request a demonstration at your school or practice.

Take your time to explore all the functionalities to ensure they work and there aren't bugs that pose significant problems in product usage.
Don't forget to ask how the trial version differs from the full one.

- Select the 'complete' option if you managed to evaluate all functionalities of the product and have a good understanding of its technical limitations (if any) and the available technical support.

- Select the 'none' option if you didn't manage to try out the product despite your efforts.

- Accordingly, select 'adequate' or 'limited' when the level of evidence found is between complete and none.

2) EXPERT/ PROFESSIONAL OPINIONS

Talk to **professionals** you know and trust that have an affinity with technology, for example a specialist teacher that employs digital technology in the classroom or a speech therapist experienced with augmentative and alternative communication.
Ask **autistic people** that have used the product or **organisations** or agencies that offer counseling in technology.

- Select the 'complete' option if you managed to talk to relevant professionals and autistic people that have used the specific product and shared their experience with the technical aspects of the product.
- Select the 'none' option if you didn't' manage to find any professional or autistic person that has used the product.
- Select 'adequate' or 'limited' accordingly.

3) ONLINE REVIEWS

Then, have a look at **online reviews** of the product.
Check websites that compare digital products. Read reviews from users that identify as autistic and their families. Pay attention to people that have been using the product for a (relatively) long time, as they have more chance of having explored all technical aspects and having come across technical difficulties. Read and compare as many reviews as possible to improve objectivity. Keep in mind that reviewers' circumstances (for example their level of familiarity with modern technology) may not be the same as yours and individual experiences may not be generalisable.

4) ACADEMIC/ SCIENTIFIC RESEARCH

Finally, it's worth seeking **academic** opinions on the product. Start on googlescholar.com and check if there are reviews that include the product in question. You might also find an article or a talk on mainstream media that discuss specific products, for example on YouTube. Check the academic's relevant qualifications, affiliations and potential conflicts of interest when you decide how much trust to put in them.

- Select the 'complete' option, if you managed to find an article or talk by an academic that refers to how technically sound the product is.
- Select the 'none' option, if you didn't get access to an academic opinion through any channel.
- Select 'adequate' or 'limited' accordingly.

Proceed to the evaluation of evidence for Engagement and Effectiveness in the same way.

If you'd like some ideas about specific sources of evidence for digital products for autism, you can have a look at the list BETA compiled based on suggestions from our collaborative study's expert panel: Sources of evidence.