Innovative rehabilitation of visually impaired children: «Sharehab» and the role of apps

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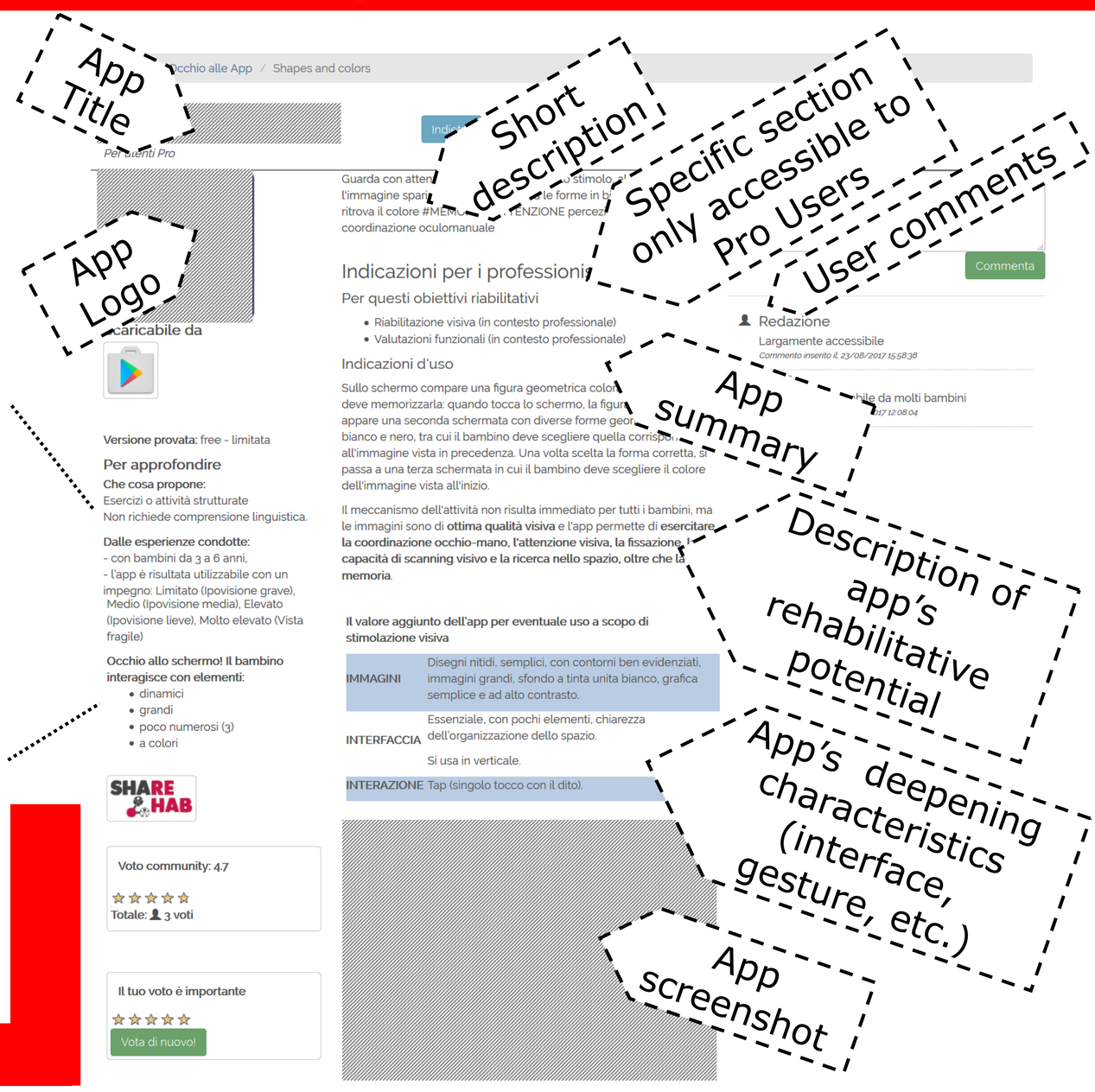
Digital technologies, apps and tablets play an important role in early efforts to sustain visual capacity to **stimulate hand-eye coordination** in the rehabilitation training of **children with visual impairment.** Sharehab.it for therapists and parents: a **quick way to choose** and access the right app and share info about digital resources.

Example



Appropriate end-user profile (based on therapist experience)

- Language comprehension (Y/N)
- Age range
- Degree of visual impairment: mild, medium, severe
- Associated with other impairments

Main visual characteristics of the app

- Static/Dynamic
- Dimension
- Numerosity
- Colour/BW

Apps selected and analytically classified in terms of:

Apps' rehabilitative potential

e.g. hand-eye coordination, visual scanning, visual tracking…

Suitability

for different degrees of low vision

Recommended context of use

e.g. rehabilitation centres, school, home

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INNOVATIVE REHABILITATION OF VISUAL IMPAIRED CHILDREN: SHAREHAB AND THE ROLE OF THE APPS

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Digital technologies play an important role in early efforts to sustain visual capacity and to stimulate hand-eye coordination, in rehabilitation training of children with visual impairment. Tablets and "apps" are extremely popular among children, therapists often use digital technologies created specifically for visually-impaired children, together with more attractive digital resources available on generic app market. Not all apps have accessibility features and the market is very broad and dynamic, consequently it is difficult to choose those that are usable even for the visually impaired. Therapists and parents need a quick way to choice and access the best app for needs of that child. From these considerations we have created an action research path concluded with the release of "share rehabilitation resources" platform.

The main aim of project conducted is to extend previous studies of team, on the usability of digital resources, including apps for tablet, and to establish an online environment for knowledge and experience sharing among parents of visually-impaired children, rehabilitation professionals and also teachers. This is dedicated to the field of digital resources useful for the education and rehabilitation of children with low vision, blending authoritative documentation and the social element.

The project took place in main phases:

- defining criteria that make apps suitable for children with low vision,
- validating criteria with end users
- selecting and analysing apps responding to these validated criteria
- creating an online environment that showcases these apps and info (to "share rehabilitation resources").

From a strictly research perspective, the most important aspect was to identify the key elements that make generic apps usable by visually-impaired children in rehabilitative and playful contexts. A group of therapists analyzed mainstream products available in app stores, in terms of apps' rehabilitative potential (e.g., hand-eye coordination, visual scanning, visual tracking), suitability for different degrees of low vision (i.e., mild, medium, severe), and recommended context of use (e.g., rehabilitation centres, school, home). This process led to selection of a set of apps for showcasing in the online environment, open to the contribution of all stakeholders, to stimulate the sharing of experience.

The main outcome emerging from these investigations is a hybrid online environment (website www.sharehab.it) dedicated to supporting the search of app useful by (mainly) children with low vision. The expected impact is to make information easily available for therapists and parents. Application designers, developers they also take into account the accessibility and usability criteria for children with low vision.