

ACCESSIBLE EUROPE 2019 – CONTRIBUTION

University of Malta



Olly Speaks – An Innovative Therapeutic Device Supporting Children with Developmental Language Disorders

ACTIVITY COVERAGE

- Regional cooperation and stakeholder engagement: the activity strengthens and supports regional cooperation and the engagement of all relevant stakeholders, in line with the European Accessibility act, in the development and implementation of ICT accessibility policies and solutions in the European region.
- ICT accessibility policies: raising awareness and/or promoting relevant guidelines on public policies, including exchanging knowledge and sharing best practices on ICT accessibility. This may include the development of standards.
- Public procurement with accessibility features: promoting regional and in-country deliver of public procurement as a tool to improve the inclusion of persons with disabilities and specific needs.
- Web Accessibility: developing regional and in country capacity through web accessibility features and/or training to ensure that websites and related services are available and accessible to all citizens.
- Media Services Accessibility: raising awareness about accessibility possibilities of TV and video streaming on digital platforms, and promoting the implementation of appropriate solutions.
- Innovation and Accessibility: promoting the development of regional and in-country capacity building on programming for all, including persons with disabilities and specific



needs. This may include embedding “accessible by design” in the product’s innovation/development process.

DESCRIPTION OF CURRENT/RECENT ACTIVITIES

Developmental Language Disorders (DLD) in children may be associated with intellectual disability, autism and/or hearing loss. However, DLD occurs in the absence of evident causative factors. Although bilingualism does not cause DLD, such disorders can be complicated when children have bilingual or multilingual exposure. DLD in children can be addressed by a customized intervention programme drawn up by a professional Speech Language Pathologist (SLP) based on assessment and regular review of the child’s speech and language skills. However, children often lose engagement when subjected to repetitive and lengthy therapy activities. This impinges on the effectiveness of intervention. Moreover, therapy sessions offered in the public health clinics often take place during school hours, disrupting children’s routine. Olly Speaks was developed specifically to facilitate speech and language assessment and therapy for bilingual children with DLD. It was developed as a smart educational toy that entices children to engage at their pace with the therapeutic activities assigned by the SLPs by creating a more rewarding and motivating environment to improve speech and/or language skills. Through a dedicated SLP app, the device also takes another clinical dimension in assisting SLPs in assessing the speech and language skills of children in a bilingual environment. Furthermore, this app allows an SLP to directly control the device during intervention activities, both in the clinic and remotely when the child is at home. The various moving parts of Olly Speaks provide a unique kinaesthetic learning experience to kids in the presence of the guardian(s). Therefore, Olly Speaks contributes to improving the quality of life and contributes to increasing the efficiency of the speech and language therapy service within the Health and/or Educational sector. Figure 1 shows a typical scenario where Olly Speaks is used. Apart from being a product to support SLPs to provide therapy (see scenario in Figure 1), the product appeals to parents looking for educational toys or therapy continuation at home, or as a platform to deliver education in various contexts. A usability study with 155 children was also carried out, and apart from recording children’s performance metrics, satisfaction and user experience were also documented in order to determine the attractiveness of the device. Olly Speaks was very well received by children and proved to generate more positive emotions while playing with the device. Olly Speaks has been developed by a multi-disciplinary team of researchers, SLPs and game developers, through a research project (SPEECHIE – www.speechieproject.com) funded by the Malta Council for Science and Technology (MCST) under the Fusion R&I Programme 2016.



Figure 1 - A typical scenario where *Olly-Speaks* is used





Activity running in:

- 2016 or before 2017 2018 2019 2020 2021 2022 2023

CALL FOR COLLABORATION/COMMITMENT TO FUTURE ACTIVITIES

There is no such a comprehensive product-service system on the market targeted specifically for children with DLD. Based on an economic impact analysis [1], this device has an international market potential and economic impact, as revenues can be generated by offering a service to SLPs as well as by selling the device as an educational toy in the mainstream market and in the specific market of children with DLD [2]. The device will have three main streams of income: (i) selling Olly Speaks as a stand-alone smart toy; (ii) selling a novel dedicated SLP app which can be used either as stand-alone or in conjunction with the device and (iii) offering speech-language assessment and therapy as a remote service. The SPEECHIE project research team is seeking collaboration to take Olly Speaks closer to market. We need further funding to develop games that specifically tackle speech intervention and translating the games, into other bilingual pairs (e.g. German-English, Spanish-English etc.), since the current version is restricted to Maltese-English. Through collaboration with international stakeholders the SPEECHIE team is aiming at enhancing the device’s position when placed in foreign markets as it will cater for the most spoken languages globally.

Reference:

[1] Equinox Advisory (2016), *SPEECHIE: A Novel Device Supporting Children with Language Impairment*, Economic Impact Analysis Report.

ORGANISATION INFORMATION

Organisation Name: University of Malta Country: Malta
 Organisation/Activity URL: www.speechieproject.com

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