

5. CONCLUSION / FUTURE WORK

In this paper, we presented Tiwouh, a technological solution to support communication interventions in daily-life. This solution, deployed on the field, offers extended features to overcome the multiple challenges that individuals with complex communication needs may face, especially those with ID [12-13].

We presented the deployment of the solution in a daycare facility for adults with ID. After identifying the needs and constraints of adults but also the structure, we developed adapted contents by involving as much staff members and adults as possible in order to address false beliefs and create cohesion to favor the tool dissemination. The presence of a referent person – in the form of an SLP student – was crucial for the deployment success. Capitalizing on previous attempts in this structure, this need had been identified from the very beginning by La Fermette supervision staff.

Following this deployment, several perspectives can be drawn. First, based on adults mastering the tool usage, health professionals can develop new activities to address other domains of communication, such as expressing emotions or telling stories. Second, thanks to the sharing content feature, participants' families now consider getting the solution to use the personal communication boards developed in this intervention [8]. To go further, we will develop training supports to allow users to develop their knowledge about AAC interventions. These supports will be diffused on the plate-form under different forms: videos, grids, datasheets, etc. Finally, even though the presence of a referent person was part of the success of this work, it is not sustainable over time. Remote coaching modalities will be investigated to keep supervising user and improving communication interventions.

ACKNOWLEDGEMENTS

Authors would like to give special thanks to every member of La Fermette staff who have put a lot of energy in this novel intervention. Adults have also been really helpful to implement this intervention. Finally, we thank Gaëlle Liégeois for her precious support on communication interventions in La Fermette.

REFERENCES

- [1] Mouga S, Almeida J, Café C, Duque F, Oliveira G. (2015). Adaptive profiles in autism and other neurodevelopmental disorders. *Journal of Autism and Developmental Disorders* 45(4): 1001-1012. <https://doi.org/10.1007/s10803-014-2256-x>
- [2] Nepo K, Tincani M, Axelrod S, Meszaros L. (2017). iPod touch® to increase functional communication of adults with autism spectrum disorder and significant intellectual disability. *Focus on Autism and Other Developmental Disabilities* 32(3): 209-217. <https://doi.org/10.1177/1088357615612752>
- [3] Cihak DF, Kessler K, Alberto PA (2008). Use of a handheld prompting system to transition independently through vocational tasks for students with moderate and severe intellectual disabilities. *Education and Training in Developmental Disabilities* 102-110. <https://doi.org/10.1177/0269215507081577>
- [4] Frost LA, Bondy AS. (1994). PECS training manual. Newark: Pyramid Educational Consultants.
- [5] Tincani M, Lorah ER. (2011). The Picture-Exchange Communication System (PECS) increases functional communication of adults with intellectual disabilities. *Evidence-Based Communication Assessment and Intervention* 5(3): 168-170. <https://doi.org/10.1080/17489539.2012.673748>
- [6] Sulzer-Azaroff B, Hoffman AO, Horton CB, Bondy A, Frost L. (2009). The Picture Exchange Communication System (PECS) what do the data say? *Focus on Autism and Other Developmental Disabilities* 24(2): 89-103. <https://doi.org/10.1177/1088357609332743>
- [7] Campigotto R, McEwen R, Epp CD. (2013). Especially social: Exploring the use of an iOS application in special needs classrooms. *Computers & Education* 60(1): 74-86. <https://doi.org/10.1016/j.compedu.2012.08.002>
- [8] Ganz JB, Morin KL, Foster MJ, Vannest KJ, Genç Tosun D, Gregori EV, Gerow SL. (2017). High-technology augmentative and alternative communication for individuals with intellectual and developmental disabilities and complex communication needs: a meta-analysis. *Augmentative and Alternative Communication* 33(4): 224-238. <https://doi.org/10.1080/07434618.2017.1373855>
- [9] Alzrayer N, Banda DR, Koul RK. (2014). Use of iPad/iPods with individuals with autism and other developmental disabilities: A meta-analysis of communication interventions. *Review Journal of Autism and Developmental Disorders* 1(3): 179-191. <https://doi.org/10.1007/s40489-014-0018-5>
- [10] Fage C, Pommereau L, Consel C, Balland E, Sauzéon H. (2016). Tablet-based activity schedule in mainstream environment for children with autism and children with ID. *ACM Transactions on Accessible Computing (TACCESS)* 8(3/9). <https://doi.org/10.1145/2854156>
- [11] Kagohara DM, Van Der Meer L, Ramdoss S, O'Reilly MF, Lancioni GE, Davis TN, Green VA. (2013). Using iPods® and iPads® in teaching programs for individuals with developmental disabilities: A systematic review. *Research in Developmental Disabilities* 34(1): 147-156. <https://doi.org/10.1016/j.ridd.2012.07.027>
- [12] McNaughton D, Light J. (2013). The iPad and mobile technology revolution: Benefits and challenges for individuals who require augmentative and alternative communication. *Augmentative and Alternative Communication* 29(2): 107-116. <https://doi.org/10.3109/07434618.2013.784930>
- [13] Maillart C, Grevesse P, Martinez Perez T. (2015). Qu'attendent les orthophonistes des applications numériques à destination des personnes avec trouble du spectre autistique? *Rééducation Orthophonique* (264): 139-150.
- [14] Stephenson J, Limbrick L. (2015). A review of the use of touch-screen mobile devices by people with developmental disabilities. *Journal of autism and developmental disorders* 45(12): 3777-3791. <https://doi.org/10.1007/s10803-013-1878-8>