

Development of Arabic Symbol Vocabulary

David Banes

Mada – Qatar Assistive Technology Center, Doha, Qatar

Background

Through the program of localizing existing Assistive Technologies to meet the needs of Arabic speakers, Mada has identified a series of underlying gaps in the technology ecosystem that were hindering the growth of innovation and new products for Arabic speakers. These included a lack of Arabic voice recognition, the cost and distribution of Arabic text to speech, quality word prediction tools and the lack of a symbol vocabulary emerging out of Arabic language.

A partnership between the University of Southampton, Hamad Medical Corporation and Mada, funded by the Qatar National Research Fund has begun a process of creating such a vocabulary that will be published under creative commons license for use within both commercial and non commercial settings and products.

Activity Report

The background to this research into the development of a bespoke Arabic symbol dictionary suitable for use by individuals who have a wide range of communication difficulties is based on the premise that there is a paucity of freely available culturally suitable Arabic pictograms, icons, symbols or other graphical representations of language for use within the Arabic community. There is a growing recognition about the number of individuals who could benefit from this type of support. Their needs are being met by the use



of externally developed Augmentative and Alternative Communication (AAC) symbol systems which are not entirely suitable for use within the Qatari culture or surroundings. Some commercially available symbol sets have added additional Arabic culturally recognizable symbols but these are not available to all users as the costs are high. There is also a significant gap in the knowledge around the type of individuals who can make use of pictorial symbol systems and how symbols can be integrated into education and daily life.

Images, symbols and pictograms can be part of a toolkit of strategies to benefit two main groups of people with a communication difficulty. First those people for whom speech and text communication is impossible, where there is a push to investigate the use of natural language processing to speed access to symbols when used with electronic AAC devices, and secondly those people with low levels of literacy, learning disabilities or specific learning difficulties, including those with Dyslexia where symbols can aid reading and writing skills. In this situation it is important to have a symbol dictionary that contains frequently used words based on standard classical Arabic. There are also some individuals who have social interaction difficulties such as severe Autism where symbols can act as prompts. Symbols may also work in a similar way for those who acquire speech and language difficulties due to strokes and brain injury.

Symbols as indicators have value in supporting the understanding of Arabic for those with little knowledge of the language and symbols as pictograms can also be used as indicators within the built environment to assist in way finding or act as health and safety warnings in a way that is obvious to the widest possible audience.

Conclusions

The project is still in process, through the project a number of key points related to selection and design of symbols. The importance of building a community of native Arabic speakers to select and review symbols for meaning has been highlighted. The project has also noted the importance of working with a range of stakeholders at an early stage of the project. This has especially included those companies that will take the symbols and integrate them into products at the end of the project and the community of professionals working with potential symbol users within the region. It is clear that the process of exploitation and dissemination of the research will need to be quite distinct and based upon community needs, which may be a quite different route from that of western press and conferences.

References

Symbol Project Blog - <http://access.ecs.soton.ac.uk/blog/symboldictionary/>

Arab/English symbol dictionary <http://www.communicationmatters.org.uk/conference-session/2014-arabic-english-symbol-dictionary>

First Year summary - <http://www.techshareme.org/files/2014/11/Arabic-Symbol-Dictionary-Poster-FINAL.pdf>

Contact details

David Banes – Mada – dbanes@mada.org.qa

E.A. Draffan – University of Southampton - ead@ecs.soton.ac.uk