'Hear' to Help Chatbot

Co-development of a chatbot to facilitate participation in tertiary education for students on the autism spectrum and those with related conditions

EXECUTIVE SUMMARY

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autismcrc.com.au

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Acknowledgements

The Cooperative Research Centre for Living with Autism (Autism CRC)

The Cooperative Research Centre for Living with Autism (Autism CRC) is the world's first national, cooperative research effort focused on autism. Taking a whole-of-life approach to autism focusing on diagnosis, education and adult life, Autism CRC researchers are working with end-users to provide evidence-based outcomes which can be translated into practical solutions for governments, service providers, education and health professionals, families and people on the autism spectrum.

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A note on terminology

We recognise that when referring to individuals on the autism spectrum, there is no one term that suits all people. In our published material and other work, when speaking of adults we use the terms 'autistic person', 'person on the autism spectrum' or 'person on the spectrum'. The term 'autistic person' uses identity first language, which reflects the belief that being autistic is a core part of a person's identity.

Autism Spectrum Disorder (ASD) is diagnostic terminology used by the healthcare sector, and is used in the context of a person being 'diagnosed with Autism Spectrum Disorder'.

Executive Summary

Background

There are an increasing number of university students who identify as being on the autism spectrum or having a related condition. This increase reflects aspirations often expressed by adolescents on the spectrum to continue their education post-secondary school, and there is evidence to suggest that those that do have better life outcomes. While students on the spectrum who used support systems had a better overall university experience, these systems tend to be underutilised. One way of making the support systems more accessible to students is to provide the available resources through a chatbot.

A chatbot is a natural language processing program that takes utterances and applies a set of rules to compile an appropriate response. The response is drawn from a 'brain' which is developed to contain information relevant to the population in which the chatbot is deployed through an app on a smart device or through a webpage. A chatbot would allow the student to explore a range of support resources from the comfort of their own phone and thus enhance use of available support systems, without increasing the workload of the staff providing support services. In this project, through a co-design and collaborative approach with individuals on the autism spectrum and key stakeholders, we aimed to develop the content of an appropriate chatbot brain to support those who are undertaking higher education.

Research Design and Methods

There were four main components to the project methodology, content, programming, testing and evaluation, each stage was co-developed with members of the autism community. Content was developed in two ways, initially, relevant resources were acquired from Curtin University (CU), relevant Acts and other pertinent material. Most significantly, a focus group was held with mentees and mentors of the Curtin Specialist Mentoring Program (CSMP) to incorporate relevant aspects of university life. Programming was undertaken face-to-face in a workshop organised with CU's Autism Academy of Software Quality Assurance (AASQA) and remotely by the wider autism community recruited through Aspect and Autism Hub. Testing was undertaken face-to-face with CSMP; and remotely by the wider autism community recruited through Aspect and Autism Hub. The chatbot was evaluated in a workshop held at Autism Hub.

Findings

The chatbot allows users to navigate social, physical and environmental cues associated with higher education, as well as providing information on anxiety and depression, and university counselling services. The chatbot is available for smart phone or web use and provides relevant resources sourced from student support services and health services. Additionally, the chatbot can provide communication strategies for various scenarios, such as asking for an extension or understanding legal rights.

Limitations

The greatest challenge with this project was participation. With the exception of the focus group with CSMP and workshop with Autism Hub, low recruitment limited the scope and depth of information added to the brain; and meant that a trial was not feasible. For the programming component, surprisingly few people got involved. This may have been due to the perceived complexity of programming. Future flyers could potentially provide examples of programming steps, or recruitment could directly target coding clubs.

There is a heavy research load on individuals on the spectrum and expecting students to take on a research project involving a trial over half a semester on top of their study load may have been optimistic. Future studies might consider recruiting people who have completed, or be considering, study to circumvent this issue with current students.

Implications for Research and Practice

The favourable responses to the chatbot verbalised in the focus group and workshops suggest that this technology is applicable and useful for facilitating participation in tertiary education. Broader applicability to assist people on the spectrum and those with related conditions in transitioning to post graduate education or employment has been suggested. Future endeavours may require the chatbot to be highly personalised, and continuously adapting to the user's circumstances and environment.

Key Recommendations

The success of this project is largely due to collaboration with the Curtin Specialist Mentoring Program, Autism Academy for Software Quality Assurance (AASQA), Autism Spectrum Australia (Aspect) and the Autism Hub (Department of Education Queensland); and the involvement of a community advisor.

Our values

Inclusion

Working together with those with the lived experience of autism in all we do

Innovation

New solutions for long term challenges

Independence

Guided by evidence based research, integrity and peer review

Cooperation

Bringing benefits to our partners; capturing opportunities they cannot capture alone

Australian Government

Department of Industry, Science, Energy and Resources

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