The Scottish Voice – bringing a high-quality text-to-speech system to Scottish school pupils and the wider public sector

The context for the use of ICT for Inclusion

Many learners benefit from text-to-speech support in reading and accessing information. Current approaches place too much emphasis on the circumstances of learners who are blind or have visual impairment. Existing text-to-speech voices supplied as default voices on desktop, netbook, laptop and tablet platforms are generally poor. Additional voices can be purchased, but they were not available as Scottish voices, the most prevalent being a world away from how most learners would sound. Most learners did not like the available voices. For users with language difficulties and who are early readers, high-quality speech is a pre-requisite. One group in particular stands out as having the most to gain from high-quality text-to-speech delivered in a country-specific accent: communication aid users. For learners who require text-to-speech (TTS) for personal communication, as opposed to accessing information/reading, whatever TTS system they use is not just their voice – it is part of their personality and their independence and helps define their identity.

Key partners: CALL Scotland, Scottish Government, CereProc, local authorities and schools.

The policy context

The policy context is as above in the first example, with emphasis on:

- Equality Act 2010, in particular Section 20 (6), Requirement to provide information in an accessible format and Guidance on reasonable adjustments, duty to provide auxiliary aids and services, and previous legislation
- Education (Additional Support for Learning) (Scotland) Act 2004/9
- Education (Disability Strategies and Pupils' Educational Records) (Scotland) Act 2002
- Representation made to the Copyright Licensing Agency (CLA) representing Publishers Licensing Society in order to secure an agreement to amend guidance, based on legislation to extend copyright exemption to print-disabled people (definition available on request).

The latter is of particular interest. Copyright exemption legislation that applies to print is different from audio, so that exemptions secured for people reading printed books did not apply to audio material. A TTS voice that could be used to legally export text in MP3 or another format was a useful addition.

The use of ICT

The voices are SAPI 5 (PC) and OS X 10.5 and later for Macintosh. Most software that allows access to TTS through Windows (or Mac) will in some way be able to access SAPI 5 voices (although this is an over-simplification). For example, learners might use WordTalk for MS Word, select one of the Scottish voices (female Heather or male Stuart) and have the text read out a paragraph, sentence, word, selection or other. It can be selected using programs such as Balabolka, Read&Write Gold and so on.

The emphasis is on inclusion and so it is not just for use by pupils who have recognised ASN, but rather by any pupil. Acceptance is greater because the pupil using the TTS voice is not seen as somehow different, as other pupils are likely to use it too. It is popular. Because **all** pupils might at some time benefit from being able to access TTS in a high-quality Scottish accent, we wanted to make the voice universally available at the **client**

rather than the **server** end (it would be available to pupils whether or not their computer was connected to a particular server). It had to work effectively across different contexts.

When identifying the need for a male equivalent (Stuart) to the female voice, we sought user feedback – inviting communication aid users, teachers, speech and language therapists, Scottish Government officials and young people with disabilities and with dyslexia to give their preferences from several options. The candidate was chosen and voice-banked and then voting took place on the voice's name. All of this was deliberately designed so that people felt involved in the process.

Key outcomes and benefits

- Most importantly, pupils can hear materials in a Scottish accent and can speak with a voice that they can regard as more like their own.
- A wide range of potential users was involved in choosing the voice via web and other surveys. In the same way, once the selected voice was completed and samples made available, a second consultation asked students and others to decide on a name for the male voice (the female voice was available prior to its preparation for school and other use).
- Male teenagers more likely to use the male voice than the female one and as males are more likely to have dyslexia and to be disaffected by school in teenage years (correlated with lower levels of literacy), there are increased chances to improve literacy.
- Within one hour of being announced on BBC television and radio, the voice had been downloaded over 150 times. Given that downloads are restricted to schools/authorities/hospitals, this number represents huge population coverage.

Main challenges and obstacles

One of the biggest problems in introducing new technologies into state sector schools is that of complying with the existing managed networks. For good reason, network security is taken seriously and so deployment of any new technology has to be carried out in a considered way, rather than schools themselves simply downloading new software (a .MSI build represents new software to the network provider). Trust and mutual respect had been built up between CALL and the authorities, they were involved in discussions, their concerns were taken seriously and how they might implement the approach was also taken seriously. Pilots were run so that the network provider could include an image refresh – meaning it had been tested and that it worked with existing software.

A subset of this problem is that there is a clear difference between those authorities that outsourced their managed networks for schools to a commercial company or to the corporate sector of the authority. Education has a different context and the needs of learners in this environment need to be considered fully, often benefiting from having network providers who themselves have been teachers and who understand the issues faced.

Speed of technological progress has been anticipated with close liaison maintained with the commercial supplier, CereProc, which has been excellent at sustaining relationships and responding where needed. (CereProc programmers are located as a commercial spin-off company within the same university as CALL Scotland.)

Additional information

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Web links:

<u>http://www.thescottishvoice.org.uk/Home/</u> – main website with FAQs, downloads and resources

http://www.books4all.org.uk - includes video materials showing its use

http://edinburghnews.scotsman.com/news/Software-speaking-up-for-Scottish.6836760.jp

http://www.engageforeducation.org/2011/09/new-scottish-voice-stuart-launched/

http://www.scotland.gov.uk/News/Releases/2011/09/14134332

http://www.google.com/hostednews/ukpress/article/ALeqM5hkdkr6GVVKdmO1Ph1hKsl2U EqAKq?docld=N0380941316002968353A

http://www.huffingtonpost.co.uk/2011/09/14/scottish-pupils-with-lear n 962136.html

http://childpolicyinfo.childreninscotland.org.uk/index/news-app?story=10915&topic=29

https://blogs.glowscotland.org.uk/fa/ICTFalkirkPrimaries/2011/03/14/wordtalk/

http://www.youtube.com/watch?v=WLTmOrOg_iM

Sample licence agreements:

http://www.thescottishvoice.org.uk/Licence-Agreement/

In isolation, the examples represent innovation in practice that started with identifying user problems before going on to address these for both the individual and at a more strategic level. Taken together, the examples demonstrate the benefits of taking a more integrated approach – encompassing advice (by phone, website, face-to-face support), options to try things out (such as equipment loans of specialist assistive technologies or augmentative and alternative communication systems), CPD/training and collaboration on policy and practice development at various levels of government, and user-focused research and development.