ADVANCE QUEENSLAND

Small Business Innovation Research

Information Exchange day

Supporting Learning for Students with Disability in Rural and Remote Locations

Department of Education and Training

Queensland Government

This challenge is to provide a **technological solution** that supports **improved interactive visual educational services** to students with disability in **Queensland state schools** in rural and remote locations.

Rural and remote state schools

615 schools – nearly 50% of all state schools

16,000 FTE staff – nearly 25% of all staff

115,000 students – 21% of all state school students

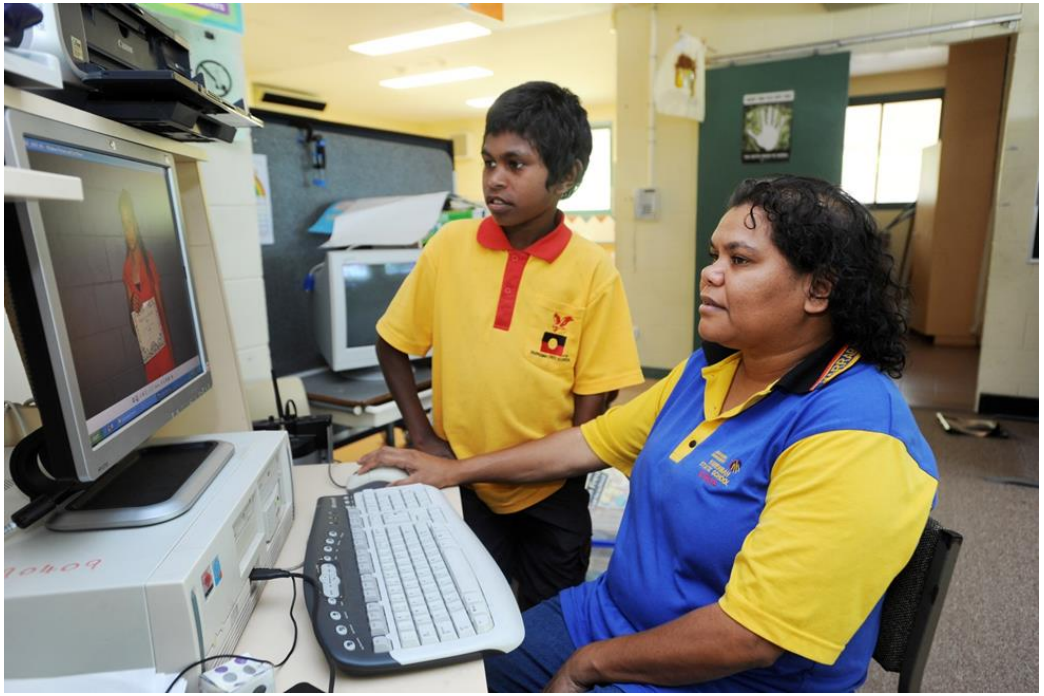
Nearly 45% of remote students are Indigenous

Mostly small schools

Background

Telepractice is ‘the application of telecommunications technology to deliver clinical services at a distance by linking clinician to client, or clinician to clinician for assessment, intervention and/or consultation’

(American Speech-Language-Hearing Association, 2005).



Background

In rural and remote state schools, telepractice can be used to:

- deliver **student support services**, and
- link specialist staff with students, teachers and with each other

Background

2015 – Trial to deliver speech-language therapy services through telepractice to small number of rural and remote schools in North Queensland Region

Findings:

- benefits for students when a reliable telepractice platform was used
- requires good audio and visual quality at low bandwidth
- staff readiness to adopt telepractice once reliable fit-for-purpose technology, training and technical support is in place.

2016 – expanded telepractice trial in Darling Downs South West Region delivering other student services.

A range of videoconferencing platforms were identified for the telepractice trial.

Background

2016 DET telepractice trial findings:

In remote and rural areas, a telepractice platform requires good audio and visual quality at low bandwidth, which can be enhanced by an additional data source.

- Audio quality: Poor or no sound, e.g. lip sync problems, echo, distortion, audio dropouts (e.g. greater than 5 drop outs)
- Video quality: Poor or no video, e.g. pixilation, frozen frames, video drop outs
- Network connectivity: e.g. 360Kbps required for basic video; latency lower than 300ms required for interaction

Key Issues

Connectivity and **Bandwidth**

Bandwidth restrictions :

- impact smooth, real-time video conferencing
- restrict the ability to download large files (which may form a major portion of education or therapy resources provided in these locations).

Connectivity and bandwidth limitations can result in unreliable video conferencing and delays in provision of support services to the student and the students' families and peer groups.

Key Issues

Specific requirements to deliver this service:

- quality operation at low bandwidth and at high bandwidth school traffic times
- high definition video capability
- quality audio capability
- user-friendly software
- meeting of information security and privacy requirements
- consideration of infrastructure, hardware and data requirements to augment software solutions.

Design Parameters

The successful solution will need to address the following technical requirements:

- compatibility with the departments current Enterprise architecture
- be able to overcome issues of low bandwidth in rural and remote areas
- simultaneous delivery of high quality download, resolution, frame rate and audio
- meet the minimum requirements for students with sensory impairments (e.g. compatibility with specialist screen readers, switch and scanning capability, easy instructions, appropriate visual contrast or magnification, captioning or alternative keyboard compatibility).
- able to be provided consistently across a wide geographic distance and varying population centre sizes
- must address logistical issues including the need for physical infrastructure, supply and maintenance

Design Parameters (continued)

- Integration with a variety of software and hardware in state schools and home classrooms (for School of Distance Education students)
- For use on a range of hardware including portable devices such as Departmental laptops, tablets and mobile phones
- be accessible ‘on demand’ regardless of usual business or school hours
- be intuitive to ensure error free access
- security of information online and alignment with relevant legislative and policy requirements including:

Australian Government Privacy and Cloud Computing Framework; (if required)
Queensland Government Cloud Computing Strategy, (if required)
Queensland Government Enterprise Architecture, specifically
Information Security (IS18).
Information Access and Use (IS33)
Queensland Information Privacy Act 2009,
Queensland Government Information Security Framework