

Queensland Department of Education Trial of OrCam in classrooms 2019/2020

In 2019, the Department of Education commissioned a trial of the **OrCam text-to-speech device** in 10 schools across QLD, year levels 4 – 11. The trial was to assess whether students with reading difficulties engaged better with curriculum when using the OrCam. Fourteen students participated, and schools included Remote (Aurukun SS), Regional (Sarina SHS) and Metro (Brighton SS). In late 2020 the results of the trial were reported to the Minister of Education in a report entitled **“Queensland Department of Education OrCam Wearable Text-to-speech Technology Trial”** (QDEOWTTS) fully supporting the use of OrCam as an option for some students.

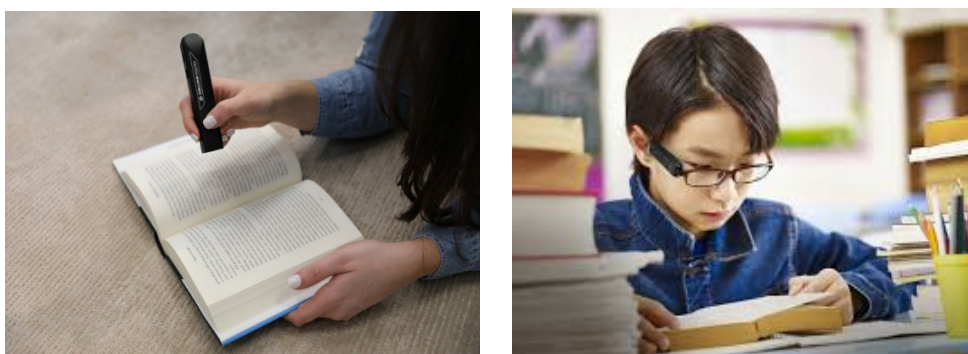


Figure 1 OrCam READ device (left) and OrCam MyEye Smart Reader device (right)

The OrCam READ is a hand-held device that can capture all or part of a page depending on the height to paper. The OrCam MyEye Smart Reader is mounted on spectacles and reads blocks of text that is pointed to with the student’s finger.

All of the participating students had diagnosed Learning Difficulties.



Conclusions of the Report to the Minister (2020)

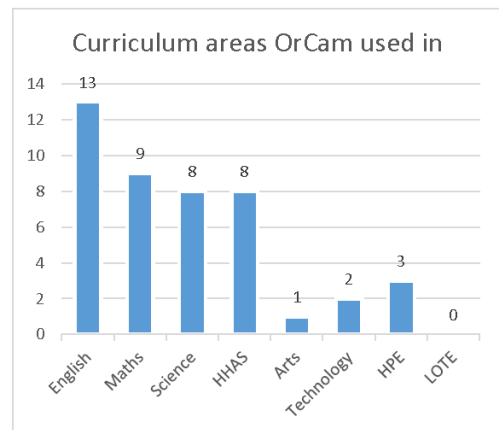
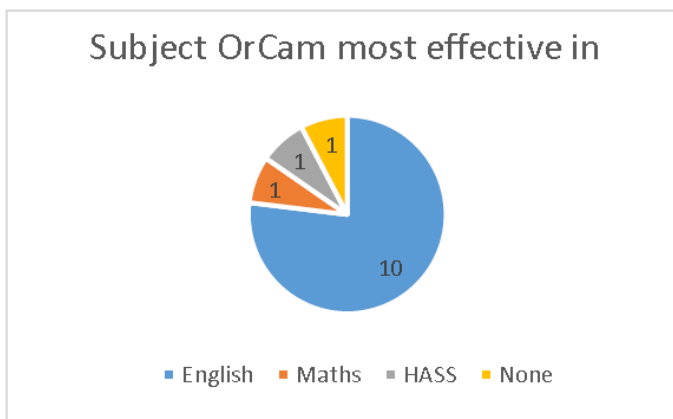
- “The trial has confirmed the OrCam as a device to support students to engage independently in tasks involving engagement with written content and to support students to successfully complete reading tasks across learning environments and areas of the Australian curriculum.”¹
- “88% of schools that responded indicated they considered the OrCam an effective tool for students to engage with the curriculum.”

¹ (QDEOWTTS Trial Report August 2020 Page 21)

- “All schools indicated every target student increased engagement with written content when using the OrCam, with more than 50% indicating an increase in engagement of more than 25%.”
- “Almost a quarter of students were reported as increasing engagement with written content of more than 100%.”
- “All schools indicated that every target student from the trial was more engaged with written content as a result of using the OrCam.”
- “Schools noted students were less distracted, less frustrated and less likely to engage in disruptive behaviour when using the OrCam.”
- “Students were observed as being more eager to select books and to engage with written text more often.”
- “Student reading task “endurance” was noted as having a significant improvement and reduced student tendency to “fake” reading”
- “All students used the OrCam during activities relating to the English curriculum and 69% of students used the OrCam in Mathematics”
- “Results from the trial indicated that most students were comfortable using the OrCam either with the glasses provided or attached to their own glasses”

“Over 62% of students were either highly motivated to use the OrCam or sought out the OrCam to use during reading tasks.”

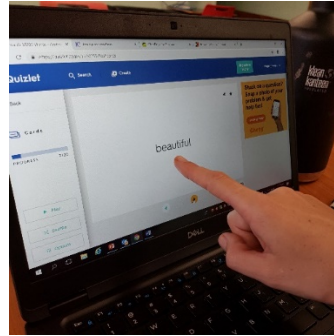
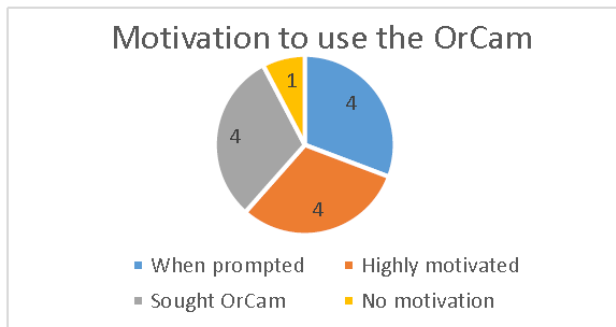
Effectiveness



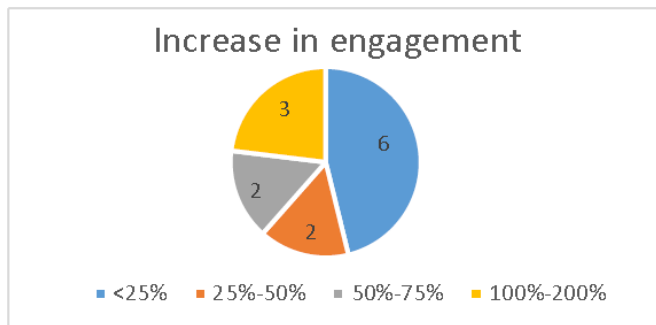
“Most students were either highly motivated to use the OrCam or sought it out for reading activities”³

² QDEOWTTS Trial Report August 2020 (page 14)

³ QDEOWTTS Trial Report August 2020 (page 12)



- “All students who were using a reading pen used the OrCam as a replacement during the trial. It was reported that fewer devices and apps were used by students when the OrCam was available.”⁴
- Quote from Teacher : “The written material that supports learning in this field is frequently rich in language and layers of inference. When free to engage in listening to the text, student was able to invest considerable energy into the higher order thinking skills required to complete tasks.”⁵



- “Results indicate all students increased their engagement with written content as a result of using the OrCam. Most students demonstrated an increase in engaging with written content by at least 25%. Three students were identified as at least doubling their engagement with written content.”⁶

General Findings of the Report

- “The OrCam technology has the capacity to enable students with a wide range of literacy support needs to become independent in engaging with reading materials, becoming less reliant on external support, provided either by staff or more extensive systems of text recognition and speech. It has the potential to increase student independence, thereby increasing motivation, engagement and participation with the curriculum.”⁷

⁴ QDEOWTTS Trial Report August 2020 (page 13)

⁵ QDEOWTTS Trial Report August 2020 (page 15)

⁶ QDEOWTTS Trial Report August 2020 (page 16)

⁷ QLD Dept. Education OrCam Wearable Text-to-speech Technology Trial Report August 2020 (page 4)

- “Feedback from the trial identified that the OrCam can enhance student engagement with written content. The trial also identified the OrCam is considered an effective tool for students to engage with and access the curriculum. Increased engagement with written content when using the OrCam was observed by schools during the trial.

Improvement in student outcomes was observed during or immediately following the trial. School staff noted students were less distracted during lessons, less frustrated with the lesson content and less likely to engage in disruptive behaviour when using the OrCam.

Students were more motivated to select books and to engage with written text more often. Student confidence and attention to reading tasks was reported as significantly improving across many learning areas when using the OrCam.”⁸

Quotes from Teachers – survey feedback

- “Was much more enthusiastic and willing to interact with all forms of written content when using the OrCam. Parents reported the student would often mention that if they had it at home they would be able to complete some tasks or read text that was around them.”
- “Was less likely to become frustrated when engaging with written content. Could engage for up to 20 minutes or more where would previously become frustrated within a minute or two.”
- “The student became: *eager to read *greatly more active in classroom conversations about shared reading *able to demonstrate greater comprehension of text - even in contrast to whole class/ group sharing of text - this appeared to be due to their ability to scroll and check text.”
- “ACTIVE engagement with text became a successful experience for them. No longer role played reading, became a reader.”
- “The student: *was engaged from the commencement of lessons (in contrast to their usual slow start) *remained engaged for the duration of the lesson rather than 'tiring' *was able to be a self-starter and revelled in their new found ability to be an independent worker *equipped with their knowledge of the content they were able to engage actively in peer to peer learning conversations.”
- “Became far more confident and on point in collaborative discussions. Ability to engage in and complete tasks improved greatly.”

⁸ QDEOWTTS Trial Report August 2020 (page 2)

- “Over 60% of schools indicated there was an improvement in outcomes during the trial. This is significant, as the trial was over a relatively short timeline.”⁹
 - “The student has improved a grade level in English and this is in part due to the teachers' increased knowledge of the students' capabilities 'revealed' through use of the OrCam.”
 - “The ability to increase engagement with the curriculum and be more settled in the classroom was noticeable.”
 - “The following term this student's English marks have shown a whole grade level improvement - D to C.”
- “The following observations were documented by schools in relation to changes in student behaviour in engaging with written content when using the OrCam.”
 - “Was much happier to engage with activities that involved reading, meltdowns decreased due to frustration.”
 - “All positives. *Eager to select a book *Enthusiastic engagement with a range of texts *Exponential growth of task endurance (ability to sit and focus on an academic challenge) *Shifted from requiring intensive person to person support in all stages of a task to often working independently.”
 - “Used the OrCam to be able to do what they could only role play before. Displayed joy in being able to decipher the written word”
 - “Students who are able to comprehend text at a higher level than their accuracy in deciphering text revelled in their new found freedom to independently access information at the level and beyond. No delay was experienced in this positive outcome - there was an immediacy in student’s experience of success when engaging with text.”¹⁰
- “The vast majority of schools indicated the OrCam was an effective tool to support students to engage with the curriculum.”¹¹
 - “Students were able to focus on the meaning within the text rather than struggle through deciphering the written word. The technology is unobtrusive, easy to operate and easy to store. It promotes independent learning.”

⁹ (QDEOWTTS Trial Report August 2020 Page 17)

¹⁰ (QDEOWTTS Trial Report August 2020 Page 19)

¹¹ (QDEOWTTS Trial Report August 2020 Page 20)

Trial schools

Nine schools were approved to participate in the trial.

School	Region	Sector
Aurukun State School	Far North Queensland	Prep - 10
Blackwater North State School	Central Queensland	Primary
Brighton State School	Metropolitan	Primary
Middle Ridge State School	Darling Downs South West	Primary
North Lakes State College	North Coast	Prep - 12
Park Avenue State School	Central Queensland	Primary
Pompuraaw State School	Far North Queensland	Primary
Sarina State High School	Central Queensland	Secondary
Varsity College	South East	Prep – 12



Figure 2 Teacher Alex Winter with Year 5 at Aurukun State School