



July 2022 - December 2022

Technology-enhanced Learning Pilot (Delainamasi Government School, Nasinu, Fiji)

Introduction

The Ministry of Education, Heritage and Arts in Fiji (MEHA) has begun the push for greater integration of mobile learning technologies in the current school curriculum. A recent pilot of this initiative was started at Delainamasi Government School in Nasinu, Suva.

This initiative is being carried out under the direction of the Manager, eLearning in MEHA, Mr. Dhiraj Bhartu. The aim of the pilot is to integrate mobile technologies to support and enhance learning and teaching of the current school curriculum.

In the current pilot which was carried out over three weeks (July 18-August 5, 2022), 103 year one students are being assisted with their English literacy skills with mobile Application called WordSmart and in a way which engages and accelerates their learning. The focus is on giving teachers the skills to provide the students with access to WordSmart on the mobile learning devices (Tablet computers) to complement their existing programme and provide for individual learning differences. The time frame for stage one on WordSmart is 12 weeks during which time the teachers will provide pre and post assessment data to establish proof of concept.

The WordSmart pilot team

- Paul Blackman, Founder and Designer of WordSmart (New Zealand)
- Blair Murray, Marketing Manager and on site IT support (New Zealand).
- Dhiraj Bhartu, Manager eLearning, Ministry of Education, Heritage and Arts, Fiji
- Vilitati Togavou
- Som Naidu, Former Pro-Vice Chancellor and Director of the Centre for Flexible Learning, The University of the South Pacific.

The Delainamasi School Team

- Aminio Kaivuaqava, Head Teacher
- Tabuatola Tagiwaqa, Year one teacher
- Timaima. R. Dau, Year one teacher
- Mila Sosene, Year one teacher

WordSmart App

Children learning English as a second language often find it difficult to pronounce the words. This is because acquiring the sounds of English is often influenced by their first and native languages. One way to overcome this is understanding and using the way our brains naturally learn by using oral storytelling to teach the sounds of the letters.

WordSmart is a mobile application that helps us do that. It is an online learning tool that gamifies reading, giving beginner readers a head start by teaching the first 29 phonemes by using humorous oral stories. Students also learn the formation of letters and CVC words (Consonant/Vowel/Consonant) and through the use of rhyming couplets learn long and short vowel sounds with simple sentences. The games used in WorsSmart are inherent to learning and the students' learning is personalised. In addition to the online experience the students can take part in hands-on card games with active exercises which consolidate their learning by acting out the stories and decoding simple words. Wordsmart works on all technology platforms including Apple, Android, cell phones and chrome books.

Rationale for the initiative

www.wordsmart.app is based on mimicking the way our brains naturally learn. We are hardwired for oral storytelling so when we use funny stories to teach the sounds of the letters we will be accessing the part of the brain called the limbic system which processes emotions which is where our long term memories are stored. We can assist all children to learn reading including dyslexic students by targeting the area in the brain that they have difficulty with. Once students have mastered the letter sounds we then can start teaching them with physical resources e.g. card games using the icons from the stories.

WordSmart's vision is to demonstrate that all students regardless of ability or neurodiversity can achieve exceptional results using reading to foster and follow their passions to a level of excellence that enables them to reach their full potential.

The Delainamasi School Pilot (July 18-August 5, 2022)

In the recent pilot at Delainamasi carried out over three weeks (July 18-August 5, 2022), the Wordsmart team has been working with beginner readers to provide a reading/literacy programme where students have worked on Wordsmart to learn everything described above. This includes rhyming, blending and segmenting, identifying initial, medial and final sounds. and the ability to read and understand a simple text. This has included students who are struggling at a higher level and we could provide a programme to remediate their learning differences to enable them to read at their chronological age.

Outcomes for students and teachers

- The students have gained confidence, and absolute beginners were able to read decodable texts at the appropriate level.
- Our programme which used physical movements and taught the sounds for the first 29 phonemes and supported the existing Jolly Phonics programme.
- Parents were encouraged and took an active part to reinforce what was taught at home.

Implementation process

- A teacher/parent briefing for the schools provided an overview of the programme including detailed instructions for the students.
- The trial period comprises collecting pre and post data gathering, and an understanding of the initiative informing the content and methodology of the literacy programme.

Criteria and Standards

- All students have been able to make gains in their reading levels.
- All students have been able to learn how to become fluent readers.
- Exceptional results are defined as being over and above what is normally expected.
- The reading programme are personalised for each individual learner including the content and the reading levels.
- Reading levels are assessed using a range of tools depending on the level of the student e.g. a phonics assessment of the sounds and names of the first 29 phonemes, a Burt Standardised Reading test and or Lexplore.

Implementing the plan

- The Wordsmart team travelled to Fiji (July 18-August 5, 2022), at their own expense to undertake this pilot. MEHA's contribution consisted of assistance with their accommodation and local support.
- The pilot over the three weeks in Suva included the following activities:
 1. Technical advice on the assessment tool provided by Lexplore.
 2. The assessment of quantitative and qualitative gains in the students' literacy skills including their reading age, their fluency levels and their place on a bell curve based on their scores.
 3. The workshop have been designed to give teachers the skills to use online tools provided by Wordsmart.
 4. The app Literacy for Boys/Kids begins after Wordsmart has provided a strong foundation for all beginner readers www.literacyforkids.com.
 5. In addition to the online tools Wordsmart provided hands on tools known as Prolexia (meaning proficiency with words) which includes creating a positive mindset along with a range of exercises proven to accelerate their reading programmes.
 6. Two critical success factors involved having the students pair up with their parents and or a more advanced senior student who acted as coach and mentor to strengthen and support the learner.
 7. Self regulation is an important requisite for reading and will be factored into the workshops.
 8. This simple game teaches students self regulation by asking them to choose the opposite picture of the word they see. If the student can't read the word, a more able reader can assist them.
 9. It teaches one of the keys to self regulation which is not acting on impulse but taking the time to consider what would be the best choice.
 10. The teachers were given Sunshine decodable books designed for the Pacific Islands. The teachers were delighted to receive these and commented how useful the work sheets would be.

Reflections on the Delainamasi School pilot

The signage on the walls of all the buildings and classrooms at Delainamasi Government School seek to inspire young minds and their teachers to achieve their potential. This unique signage is the work of an equally inspiring principal, Aminio Kaivuaqava.

Aminio's approach to leadership is about personal contact with all the students which includes greeting them every day and saying goodbye at the end of the school day. Close to 85% of the students lived in shanty town dwellings. When they come to school Aminio informs them that the school operates on different rules to the rules of their homes and when they enter the school the school rules apply.

The teachers all arrive at 6.30 am and the day begins with prayers and signing. All the classrooms are connected to a speaker system and the midday prayers are strictly adhered to by all students as are the times for quiet reflection. In short it is a ritual which creates an atmosphere of peaceful harmony. The students are respectful, receptive and responsive and we have been impressed by how fast they are learning to decode words to learn the basics of reading.

Early on in the sessions, one of the teachers commented that she noticed that three of her students, who she knew were struggling with reading, were really engaged and she was quite excited by this. In another class we noticed that one of the students was falling asleep or at least lying on the floor with his eyes closed. This boy was displaying the classic signs of Oppositional Defiance Disorder (O.D.D.) and his feigning sleeping was his way of displaying his passive resistance. But he seemed to like dogs because we saw him patting one of the stray dogs that was often at school. So, when we showed him a photo of my border collie he became animated, and engaged.



Delainamasi Class 101, Year One.

The Delainmasi School Pilot is a product of the the Fiji's aspirations for preparing a future ready workforce (<https://fijisun.com.fj/2022/04/21/delainmasi-govt-school-selected-for-tech-enhanced-learning-project/>). The Government of Fiji believes that education is the pathway to prosperity for any country and hopes to build a knowledge-based society that will lead the country to become more competitive in the region and internationally.

Our intervention at the Delainamasi Govt School is a world first in the way we teach the letter sounds through stories which explain how the letter sounds got their names. The letter sounds are then linked to the shape of the letters. Our goal has been to give the teachers and parents the tools they need to raise the literacy levels of the entire school. Once the students are able to pronounce CVC words and read simple sentences we will be able to measure their progress with an assessment tool known as Lexplore. This work is based on the result of 30 years of research by scientists, uses eye tracking software to measure in milli-seconds a student's eye movements as they read a text. This will provide Fiji with access to the world's best AI reading assessment tool.

At a small price, every student can be assessed as often as the school needs. It takes 4-5 minutes, is 97% accurate and is totally objective. It has been developed at the Karolinska Institute, a Medical University in Stockholm, Sweden that selects winners of the Nobel Peace Prize. For the older students in year 3 we have partnered with Literacy for Boys/Kids which is an online program specifically designed to engage students. The program provides the syntax of written language by hooking the students in with highly engaging action-packed videos. Developed by Tanya Gambower, the topics are highly engaging for all kids. In short, they hit the mark for written language specifically aimed at kids with topics they like and delivered in a way they love and learn best.

The stories embedded in Literacy for kids are age-specific and focused on the core areas of literacy: comprehension, grammar, spelling and punctuation. They are effective through their interesting and engaging topics combined with a delivery mode that supports the way a boy/girl learns in order to generate excellent learning outcomes. The children love the activities and have a multitude of interesting and fun topics to choose from.

These activities aim to reframe dyslexia which means difficulty with words, to become pro-lexia which means proficiency with words. The cumulative assessments provided by Lexplore are matched by using the formative assessments provided by Dr Christine Braid from Massey University. These assessment tools are designed to develop phonological awareness, phonics, sight word assessments, consonant blends etc. In short, we can personalise the learning journey and apply interventions curated to match the unique learning needs of every student.

Next Steps and Recommendations

As part of the pilot, the Three Year One teachers and the Deputy Head Teacher have been given initial training by WordSmart team, and this will be followed by ongoing evaluation and technical support.

Following the three week onsite visit, key measures have been agreed upon by the WordSmart team and Delainamasi Government School for the maintenance of the project. These include:

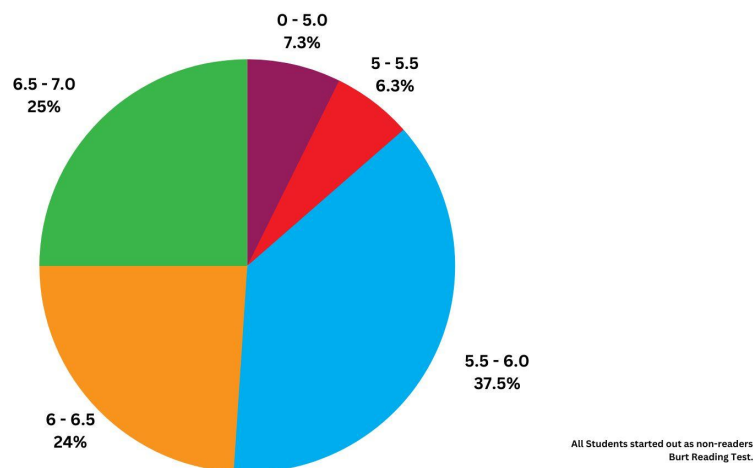
- 20 minutes of app-based learning per day, reinforced by hands-on activities.
- Weekly Friday Zoom calls between WordSmart team, all three Year One teachers and Deputy Head Teacher.
- Feedback with Vilitati Togavou from the Ministry of Education who will act as support for WordSmart at the school if any onsite technical difficulties arise.
- Remote support by WordSmart for technical and educational support.
- Two six week learning blocks with pre and post tests.
- Clearly set expectations based on the Burt Pre-Test for the 12 week trial period, every child to see a reading improvement to chronological reading age.
- All costs for technical support and physical resources have been met by WordSmart and this will continue until the end of the school year.

Following the introduction of wordsmart for beginner readers we will use the tablets for the older students from year three students upwards using literacy for kids/boys. Our recommendation is to train Ministry of Education staff and teachers to implement the AI technology developed in Sweden which measures fluency, a skill required for students at Secondary school level. This will set up Fiji to become world leaders in the application of technology for the learning and teaching of the English language.

Results

Early results are encouraging and we look forward to seeing the development of program in 2023, with the majority of year ones reading above their chronological age.

Results of eight week trial at Dalamalasi Govt School, Fiji, 2022.





Year One teachers with Blair Murray and Paul Blackman from WordSmart.