



# **PRACTICE GUIDE: IDEAS FOR USING ROBO WORDQUEST AND ROBO WORDQUIZ**

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**PRACTICE GUIDE: IDEAS FOR USING ROBO WORDQUEST AND ROBO WORDQUIZ****Dr Shamus P. Smith**

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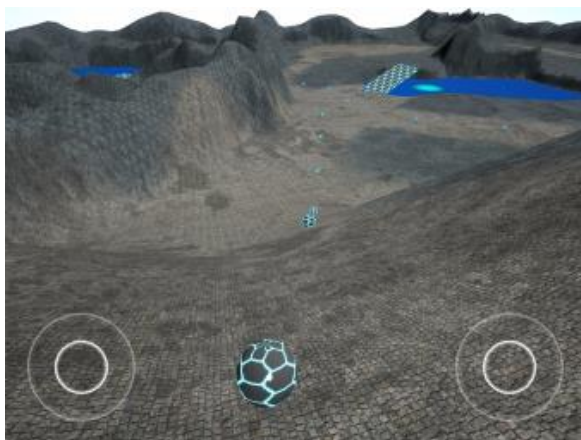
## What is Robo WordQuest?

Robo WordQuest is a 3D virtual environment serious game where learners join Captain Rusty, a computer controlled robo-dog, to explore different dimensions of a virtual world to gather energy cells to repair a crashed spaceship. An adventure/exploration narrative is embedded within the environment. Learners need to complete side-missions that unlock achievements in the form of energy cells, in the spaceship repair scenario. The achievements are represented as badges where the learner can customise their collection across three different sets of images.

The side-missions are either item collection based, there are over 250+ items to collect while exploring the 3D environments, or require the completion of literacy exercises related to punctuation use and paragraph construction. Being an open world, the learner is free to engage with either type of side-mission as and when they desire.

The aim is to provide an open-world environment where young adult and adult learners can identify and improve on aspects of their literacy. These aspects include (1) apostrophe use, (2) the use of full stops, commas, colons, semi-colons and (3) the correct construction of paragraphs. Robo WordQuest uses gaming mechanics to motivate learners and provide engaging learning activities.

Each aspect of literacy is split across three 3D worlds and each world includes a series of training videos related to each aspect of punctuation, grammar and paragraph construction. Learners can freely move between watching the training videos and playing the game.

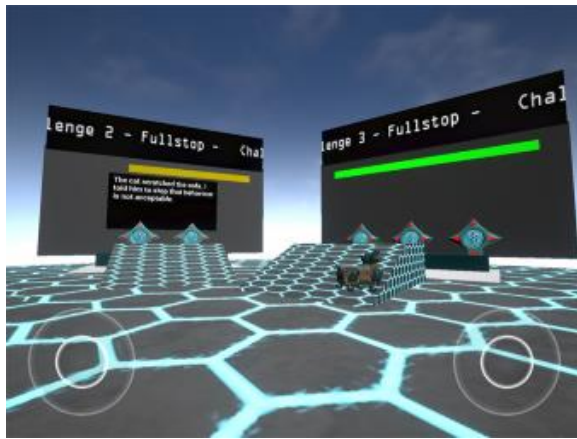


Open exploration based 3D world



On screen guidance to the collectable completion status





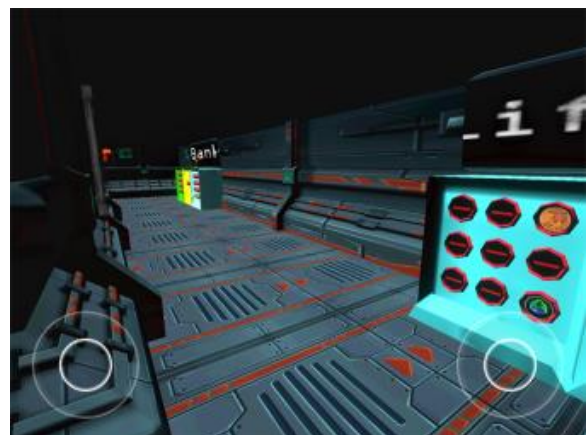
Learner choice of literacy exercises



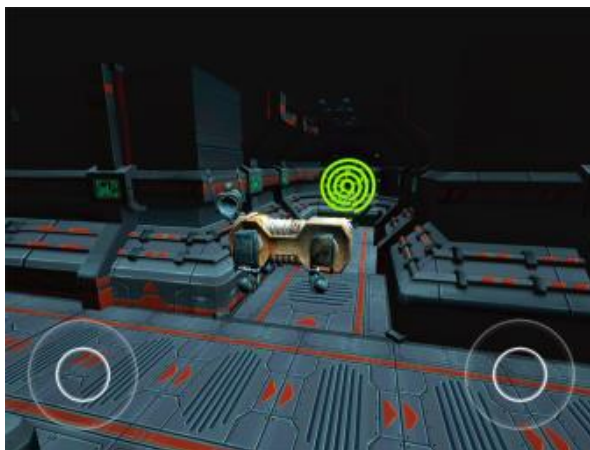
Literacy exercise with gamified content



Achievement board to track literacy exercise progress



Achievement board to track overall game progress with learner customisable badges



Robot dog avatar who provides hints on gameplay and player support



Each literacy aspect has a support video to provide the required knowledge





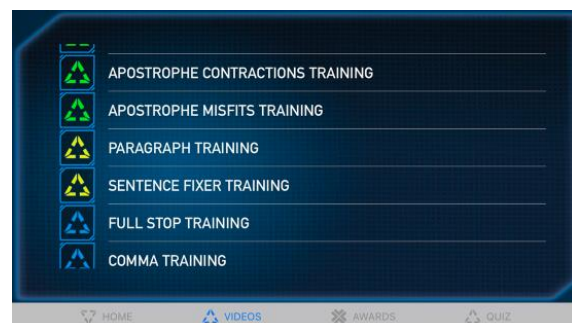
Robo WordQuest is classified as a *serious game*. Serious games combine gaming mechanics with learning activities and are based on principles from learning theory such as chunking, sequencing for gradual mastery, scaffolding and timely feedback loops. Gaming mechanics are used to motivate the learner in a fun and interactive environment.

## What is Robo WordQuiz?

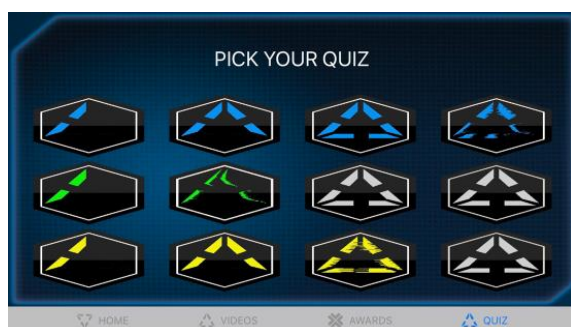
Robo WordQuiz is a quiz-based app with the videos and literacy activities from Robo WordQuest. It is more *serious* than *game*. Learners can watch literacy training videos and test their knowledge with multi-choice quizzes. Questions are randomly presented and six correct answers are required to complete a level. A *genius mode* is also available where all questions (12) in a category must be answered correctly to unlock the next quiz. Awards, as achievement badges, are unlocked via progress in the quizzes and through watching the videos.



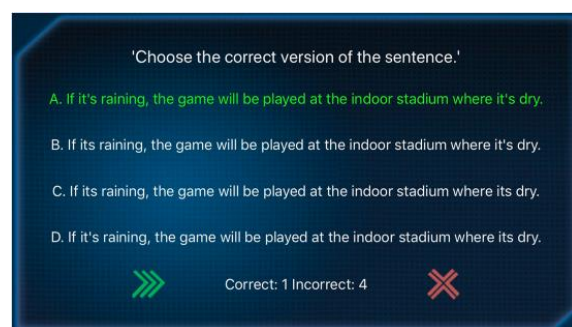
Home page menu



Video selection screen



Unlockable quizzes across punctuation (blue), apostrophes (green) and paragraph structure (yellow)



Example multi-choice quiz question

## Where can I get these apps and what do I need to run them?

Robo WordQuest and Robo WordQuiz are available for **free** download from the iTunes App Store. Robo WordQuest is also available from the Google Play online store.





Robo WordQuest



Robo WordQuiz

(Download links are available at <http://dice.newcastle.edu.au/resources.html>)



Robo WordQuest will run on iOS/Apple and Android smartphones and tablets. The app is built in the Unreal Engine 4 and requires a relatively recent device. Recommended minimum specifications are:

- iPhone 6+ running iOS 10+ (820 MB free)
- iPad 2+ or iPad Pro running iOS 10+ (820 MB free)
- Android Samsung 8+ or Galaxy Tab 8+ or similar (800 MB free)

Robo WordQuiz will run on most iPhones/iPads and requires 105MB of space.

Robo WordQuest is also available for PC desktop and Oculus head-mounted displays. These versions are unsupported beta products and are more proof of concept with immersive technology. Expert users can download these versions from the project website at <https://dice.newcastle.edu.au/robowordquest/> where there is an Installation Guide and beta (unsupported) versions for Window10, Oculus Rift and Oculus Go. A version for Oculus Quest is under development and will be added to the project page when finished.

The Robo WordQuest End User License Agreement (EULA) is available at [https://dice.newcastle.edu.au/robowordquest/RWQ\\_EULA.pdf](https://dice.newcastle.edu.au/robowordquest/RWQ_EULA.pdf). The Robo WordQuest/Robo WordQuiz Privacy Policy is available at <https://dice.newcastle.edu.au/robowordquest/pp.html>.

## Do I need the internet to run the apps?

You will need access to the Internet to download the apps from the respective app stores but once they are installed, they will run on your device without the Internet.

## Do the apps collect my personal information or gameplay?

No. Your personal information or gameplay data is not collected by the apps or sent anywhere. The apps may store app data, such as current and recent game scores/achievements, game progress or user interface configuration, but only on the local device and only for use within the apps. No data is exported outside the apps. Collected data is explicit in the apps, as shown as current game scores or represented in user interface customisation. These apps and all app data can be deleted by removing the apps from the installed device.



## How do you use these apps?

### In the classroom

These apps can be used in several ways:

1. *Embedded into courses material and learning activities:* Sometimes courses are designed to include academic literacy and literacy components as an objective of study. If improvement of literacy is a course of objective, these apps could be integrated into the curriculum and used in classroom activities. Learners could utilise the apps as a self-diagnostic in order to identify areas for improvement and play the games to gauge improvement. In this way, the apps function as a formative assessment tool. In addition, the smartphone/tablet can be plugged into smartboards and the apps projected for instructor demonstration or collaborative learning including tag-team exercises. The apps might also be used in 'speed runs' or competitive group play in the classroom.
2. *Just-in-time learning tools:* The apps can be used as a learning tool to support literacy improvement within a cohort, if knowledge gaps have been identified (for example, a common knowledge gap might be how to use an apostrophe for a plural possessive). If gaps are identified as part of the formative and summative assessment within a course, the instructor can direct students to the apps for self-paced literacy improvement.
3. *Specialist study skills workshops or academic preparation courses:* The apps could be included as key learning tool in the academic literacy component of study skill or academic preparation courses. Instructors could set learners the task of playing the game in order to promote self-diagnosis of literacy gaps and reflective self-assessment of improvement.



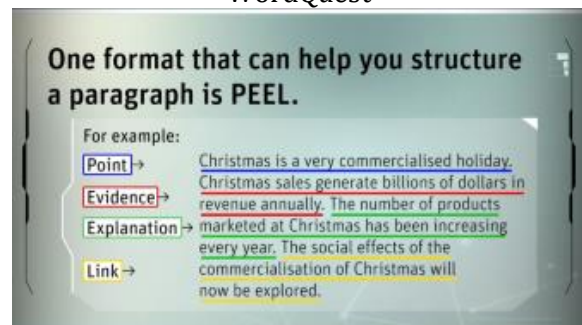
Achievement progress feedback in Robo WordQuest



In game training video console in Robo WordQuest



Achievement progress feedback in Robo WordQuiz



Paragraph structure video in Robo WordQuiz





## Out of the classroom

The apps have been developed to support mobile learning (m-learning). This involves students using the apps to learn at their own pace anytime and anywhere. The apps can be promoted as m-learning tools as part of resources in a course, degree program or learning development unit.

## Are there other similar apps available?

Robo WordQuest is our first 3D open-world serious game to support literacy learning. Robo WordQuiz is our first quiz-based app. Our previous serious game apps Apostrophe Power and Sentence Hero are also available for **free** from the iTunes App Store and the Google Play online store.



(Download links are available at <http://dice.newcastle.edu.au/resources.html>)

## Acknowledgements

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Robo WordQuiz was designed and developed by Shamus Smith. Space User Interface Set by guiwolrd.tk. Quiz material developed as part of Robo WordQuest and the Literacy Apps projects. Project Leaders: Shamus Smith and Erica Southgate || Quiz Content: Erica Southgate, Liz Stevens and Kathleen Smithers || Dog design: Will Coppins.

Robo WordQuest Project Leaders: Shamus Smith and Erica Southgate || Lead Developer/Programmer/Graphics: Richard Langridge || Assistant Content Developer: Kathleen Smithers || 3D Modelling: Will Coppins || Aboriginal Research: Maree Gruppetta

Video Production and Dog Texturing: Nodding Dog (noddingdog.com.au) || Aboriginal Art: Saretta Fielding (saretta.com.au) || Gemstone Art: Code Inferno Games (opengameart.org) || Crystal Gem Art: Evience (opengameart.org) || Circuit Art: TextureX-com (deviantart.com) || Badge/Starburst Templates: GameArtGuppy.com || Full credits in game.

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