

# VOXSpell Project Tecnical Report

Michael Kemp  
Software Engineering  
Department of Electrical and Computer Engineering  
University of Auckland  
Auckland, New Zealand 1010  
Email: mkem114@aucklanduni.ac.nz

**Abstract**—VOXSpell is a spelling quiz game developed for computers which uses speech synthesis to convey the word and is specifically targeted at children between the ages of 7-10. This influenced the design of interface, the supporting material (user manual and readme file) and the game mechanics. The interface keeps kids engaged by being easier to use as they have less motor control. The supporting material; specifically the user manual does away with large words and complex sentences so the kids can read it themselves. The mechanics engages kids in learning through gamification with points systems.

Some of it's inovative features were; homophone detection, quiz word smart selection and game extension. Homophone detection is the automatic exclusion of any words that the user might be quizzed that could sound the same as other words which can lead to quite a frustrating experience when the only to get the word to spell from the game is through speech synthesis. I wanted to ensure kids were being thoroughly tested and tailored for; any words that weren't yet attempted were more likely to be in quizzes, likewise with words that have been incorrectly spelt more times. Kids like to interact with what they're given and fiddle so I tried to make resources as extendable and swappable as possible without compromising the usability and education.

## I. GENERAL USER INTERFACE DESIGN

blah  
blahh

### A. Choice of Java, Java FX and Festival

Subsection text here.  
e

### B. Colours and Layout

Subsubsection text here.  
ueaob

### C. Information Presentation

ee  
ee

### D. Other Challenges

ee  
ee

## II. FUNCTIONALITY

### A. Motivation

### B. Usability Decisions

## III. CODE DESIGN AND DEVELOPMENT

### A. Software Design

java??  
other libraries

### B. Development Process

### C. Innovation

### D. Shortcut keys

motivations  
implementation

### E. Other Challenges

## IV. EVALUATION AND TESTING

### A. Individual Results

### B. Peer Results

any changes made to beta  
justification on change or lack of

### C. Other Evaluation

## V. FUTURE WORK

## VI. CONCLUSION

The conclusion goes here.

## REFERENCES

- [1] H. Kopka and P. W. Daly, *A Guide to L<sup>A</sup>T<sub>E</sub>X*, 3rd ed. Harlow, England: Addison-Wesley, 1999.