



The Literacy App:

An m-learning tool for low SES
undergraduate students

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Project description:

There is substantial variation in the literacy skills of low socioeconomic status (LSES) students in higher education, which are associated with poor student performance and higher attrition rates. The shift to mobile communication devices, such as smartphones and tablets, provides an opportunity for independent mobile learning (m-learning) that can help LSES students develop their literacy, anywhere and at any time. The purpose of this applied research project was to determine the efficacy of m-learning for LSES undergraduate students, with a focus on their ability to improve their literacy skills, both independently and in student learning support and teaching contexts.

This project aimed to deliver:

- Free mobile software applications (apps) designed to improve the literacy of undergraduate students, particularly those from LSES backgrounds;
- A world-first contribution to knowledge about the development and impact of an m-learning apps for improving the literacy of undergraduate students from LSES backgrounds;
- A data analytics framework for m-learning apps to understand LSES student pathways and progress in m-learning contexts;
- A practice guide for university educators on how to use the developed literacy apps with their students, particularly those from LSES backgrounds.

Conceptual and/or methodological framework:

Two literacy apps were developed for Android and iOS platforms called 'Apostrophe Power' and 'Sentence Hero'. The Apostrophe Power and Sentence Hero apps are serious games designed to help young adult and adult learners identify and improve on aspects of their literacy. These aspects include apostrophe use (Apostrophe Power) and the use of full stops, commas, colons, semi-colons and the function of the subject and verb in a sentence (Sentence Hero). Both apps use gaming mechanics to motivate learners and provide engaging learning activities that are sequenced according to level of difficulty. Each app includes a series of training videos related to each aspect of punctuation and grammar. Learners can freely move between watching the training videos and playing the game. Included in the games are feedback hints.

As part of the dissemination strategy, a project website was built <http://dice.newcastle.edu.au/> and a Twitter feed was created @Dice_Research.

Furthermore, the Apostrophe Power app was evaluated, drawing on data collected from 17 students who played the app and whose results were compared against the test results of 291 undergraduate students (LSES=146) who had taken an apostrophe test for baseline comparison.

Key findings:

- Development and free distribution of Apostrophe Power and Sentence Hero apps for iOS and Android platforms, published on the Apple iTunes App Store and the Google Play Store:
 - Apostrophe Power: 5,604 downloads worldwide (at 6/6/16)
 - Sentence Hero: 9,043 downloads worldwide (at 6/6/16)
- Analysis of app evaluation data indicated that not only did study participants who used the Apostrophe Power app improve their scores in an apostrophe usage test, but that they also progressed from below average to above average scores when compared to a larger cohort's average apostrophe usage test scores.
- Analysis of learner pathways through the apps was facilitated via a data analytics pipeline. This provided evidence that data analytics, transformed into different types of visualisations, can provide an objective representation of the relations between gaming elements, learning behaviour and pedagogical intent.
- A practice guide was published to aid educators in the use of the literacy apps: Southgate, E. and Smith, S. P. (2016). Practice guide: Ideas for using Apostrophe Power and Sentence Hero. DICE Report Series, Number 2. Newcastle: DICE Research, http://dice.newcastle.edu.au/DRS_2_2016.pdf