

The Literacy App: An M-Learning Tool for Low SES Undergraduate Students

March 2015 to December 2015

Dr Shamus Smith, The University of Newcastle

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Modifications: Changed to meet WCAG 2.0 accessibility requirements.
Alternate text inserted for all images. Minor typographical errors corrected.

Higher Education Participation and Partnerships Programme (HEPPP)

2014 National Priorities Pool FINAL REPORT

The Literacy App: An M-Learning Tool for Low SES Undergraduate Students

1 March 2015 to 20 December 2015

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In accordance with the Conditions of Grant, you must submit to the Department a **Final Report** (Clause 6.1 of Part A) and an **Acquittal Report** (clause 6.4 of Part A).

To meet this obligation, please submit:

- the completed **Final Report** template, in Word and PDF
- the completed and signed **Declaration** form, in PDF
- the completed **Acquittal Report** template, in Excel and PDF.

All documents must be submitted to equity@education.gov.au by 31 March 2016.
If you require additional guidance or clarification please contact equity@education.gov.au.

*Please send a copy of any correspondence regarding this project to:

Ms Belinda Munn
Associate Director
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1. PROJECT SUMMARY (Conditions of Grant, clause 2.2(a)-(e) of Part A)

Objectives

Table 1: Project objectives

IDENTIFIED OBJECTIVE	EXTENT TO WHICH THE OBJECTIVE WAS MET
Address substantial variation in the literacy skills of low SES students in higher education	100%. The literacy apps developed were designed as “serious games” with scaffolded exercises to allow students to engage with the material at their own pace with support videos to enable literacy skill development.
Address poor literacy skills associated with poor student performance and higher attrition rates	100%. Poor punctuation is a significant contributor to poor literacy skills. Apps developed on this project focused on higher education punctuation requirements, i.e. apostrophes, and more fundamental skills, e.g. full stops, commas, semi-colons, and colons.
Address the opportunity for independent mobile learning (m-learning) that can help low SES students develop their literacy, anywhere and at any time	100%. Two m-learning apps were developed. The literacy apps were deployed as stand-alone apps. Thus they required no internet connection to use. The apps were also deployed to the two most popular mobile device platforms, namely Android (Google) and iOS (Apple).
Determine the efficiency of m-learning for low SES undergraduate students, with a focus on their ability to develop their own literacy skills, both independently and in student learning support and teaching contexts.	100%. The Apostrophe Power app was evaluated for efficiency. Preliminary analysis indicates that not only did study participants who used the app improve their scores but that they also progressed from below average to above average scores when compared to a larger cohort’s average literacy scores.

Project Activities, Milestones and Key Performance Indicators

- All project Activities specified in Schedule 1 of the Conditions of Grant were completed
- All Project Milestones specified in Schedule 1 of the Conditions of Grant were completed
- All Key Performance Indicators specified in Schedule 1 of the Conditions of Grant were met.

Table 2: Project activities, milestones and KPIs

TIME FRAME	PLANNED ACTIVITIES AND MILESTONES	PROJECT ACTIVITIES AND MILESTONES COMPLETED	IDENTIFIED KEY PERFORMANCE INDICATORS	KEY PERFORMANCE INDICATORS OUTCOME
1-6	Develop literacy content and modularise for punctuation, sentence structure, grammar	120 exercises for Apostrophe Power, 105 exercises for Sentence Hero app, 120 modularised test questions.	Literacy exercises generated and modularised	Exercises scaffolded and deployed into the two literacy apps. Pre- and post-test for literacy were produced.
	New version of App (Android and iOS) with expanded literacy exercises	Literacy app split into two apps: Apostrophe Power and Sentence Hero	App extended and engineered	Each app completed and deployed across native Android and iOS platforms (i.e. 4 apps deployed).
	Ethics approval granted	Submitted and approved.	Ethics application submitted	UON Human Research Ethics Committee Approval No. H-2015-0226
	Dissemination strategy developed and website online	Dissemination plan developed. Domain name purchased. Website built.	Dissemination strategy and website developed	Website diceresearch.net online.
6-9	Evaluation report published. 2 scholarly papers submitted.	2 papers published. 1 paper submitted. Focus group data analysis in progress.	80 LSES student participating evaluation and pre & post tested. Pre & post scores analysed. Focus group data from 24 students collected and analysed.	Southgate et al (2015) <i>Acilite</i> 2015. Published. Hickmott et al (2016) <i>Interactive Entertainment</i> 2016. Published. Southgate and Smith. "Gamifying adult literacy learning with apps: From the 'state-of-the-art' to the 'state-of-the-actual'" (Submitted 1/2/16) 291 undergraduate students surveyed for apostrophe ability (low SES, n=146). 17 students evaluated app and participated in focus groups.
9-12	1 scholarly paper submitted	1 paper published. 2 papers in progress.	Data analytics interpreted	Smith et al (2015) <i>TALE</i> 2015. Published. "Exploring Play-Learners' Patterns of Use in Apostrophe Power" in preparation for <i>Serious Games</i> 2016 conference. "Evaluating Apostrophe Power" journal paper in preparation for <i>Entertainment Computing</i> (Elsevier)

TIME FRAME	PLANNED ACTIVITIES AND MILESTONES	PROJECT ACTIVITIES AND MILESTONES COMPLETED	IDENTIFIED KEY PERFORMANCE INDICATORS	KEY PERFORMANCE INDICATORS OUTCOME
	Practice Guide published on website and disseminated Final project report and Practice Guide published on website.	Report completed. Practice Guide completed as DICE report.	Practice Guide developed	Practice Guide on DICE website (2016). Final Report completed. Annotated bibliography published. Southgate et al. (2016) <i>DICE Report Series</i> .
	Literacy App on Apple App Store (iOS) and Goggle Play store (Android)	4 apps available for worldwide distribution.	Final iOS and Android apps.	Final apps online. <i>Apostrophe Power</i> (iOS) v1.2, (Android) v2.0. [3,906 downloads worldwide at 14/3/16] <i>Sentence Hero</i> (iOS) v1.0, (Android) v1.0. [8,470 downloads worldwide at 14/3/16]

Highlights and Issues

- Development and distribution of *Apostrophe Power* app for iOS and Android platforms
 - Published on the Apple iTunes App Store and the Google Play Store
 - 3,906 downloads worldwide (at 14/3/16).
- Development and distribution of *Sentence Hero* app for iOS and Android platforms
 - Published on the Apple iTunes App Store and the Google Play Store
 - 8,470 downloads worldwide (at 14/3/16).
- 4 conference talks:
 - “Exploring app development for m-learning and literacy improvement”, *Global Access to Post Secondary Education (GAPS) 2015 Conference*, Kuala Lumpur, Malaysia. Presented by S. P. Smith.
 - “Improving undergraduate soft skills using m-learning and serious games”, *IEEE International Conference on Teaching, Assessment, and Learning for Engineering (TALE) 2015*, Zhuhai, China. Presented by R. Bille.
 - “Interdisciplinary opportunities and challenges in creating m-learning apps: Two case studies”, *Ascilite2015*, Perth, Australia. Presented by E. Southgate.
 - “Building *Apostrophe Power*: Lessons Learnt for Serious Games Development”, *Interactive Entertainment 2016*, Canberra, Australia. Presented by D. Hickmott.
- 3 peer-reviewed papers and 1 report published (see below for details).
- 291 undergraduate students surveyed for apostrophe ability (low SES, n=146) and low scoring students invited to *Apostrophe Power* evaluation. Preliminary analysis indicates that not only did study participants who used the app improve their scores

but that they also progressed from below average to above average scores when compared to a larger cohort's average literacy scores.

- Media coverage. Paper/online with The Australian (JUNE 2, 2015) "Gamification boost for mobile learning".

<http://www.theaustralian.com.au/business/technology/gamification-boost-for-mobile-learning/story-e6frgakx-1227378634923>

Did the project lead to implementable outcomes? What changes will result at your institution/nationally? Are there activities resulting from this project that will be continued?

N/A

Did you undertake an evaluation of your project?

Yes No



Please summarise the findings and attach the evaluation report

Where applicable, indicate number of the following resulting from this project:

Student contacts	291
Journal (or other publication) submissions	3 papers and 1 report published, 1 paper submitted and 2 papers in progress.
Conference Presentations	4
Websites developed	1 (Website address: http://diceresearch.net)
Educational or marketing campaigns	4 apps
Community organisations engaged	N/A
Schools engaged	N/A

2. OTHER PROJECT MATERIAL (Conditions of Grant, clause 2.2 (b)-(e) of Part A)

Table 3: Additional materials produced over the course of the project

TYPE	AUTHOR	DATE OF PUBLICATION	PUBLICATION DETAILS
Conference paper	E. Southgate R. Bille D. Hickmott L. Stephens S. P. Smith	29/11/15	Southgate, E., Smith, S.P., Stephans, L., Hickmott, D., & Billie, R. (2015). Interdisciplinary opportunities and challenges in creating m-learning apps: two case studies. In T. Reiners, B.R. von Kinsky, D. Gibson, V. Chang, L. Irving, & K. Clarke (Eds.), Globally connected, digitally enabled. <i>Proceedings Ascilite 2015</i> in Perth (pp. FP:253-FP:262). http://www.2015conference.ascilite.org/wp-content/uploads/2015/11/ascilite-2015-proceedings.pdf
Conference paper	D. Hickmott S. P. Smith R. Bille E. Burd L. Stephens E. Southgate	14/9/16	D. Hickmott, S. P. Smith, R. Bille, E. Burd, L. Stephens, and E. Southgate. 2016. Building apostrophe power: lessons learnt for serious games development. <i>Interactive Entertainment 2016</i> . ACM, New York, NY, USA, 10 pages. http://dx.doi.org/10.1145/2843043.2843475
Conference paper	S. P. Smith D. Hickmott R. Bille E. Burd E. Southgate L. Stephens	10/12/15	S. P. Smith, D. Hickmott, R. Bille, E. Burd, E. Southgate and L. Stephens, "Improving undergraduate soft skills using m-learning and serious games," <i>Teaching, Assessment, and Learning for Engineering (TALE)</i> , 2015 IEEE International Conference on, Zhuhai, 2015, pp. 230-235. http://dx.doi.org/10.1109/TALE.2015.7386049
Report	E. Southgate S. P. Smith K. Smithers J. Budd	17/2/2016	Southgate, E., Smith, S. P., Smithers, K. & Budd, J. (2016). Serious games and learning: An annotated bibliography. <i>DICE Report Series</i> , Number 1. Newcastle: DICE Research. http://dice.newcastle.edu.au/DRS_1_2016.pdf
Software	S. P. Smith E. Southgate D. Hickmott R. Bille L. Stephens E. Burd	1/11/2015	 Apostrophe Power. When apostrophes leave you confused, bored or both, recharge with the Apostrophe Power game. It's fun, fast, easy to play, and a great way to get better at using apostrophes. Available free to download. (3906 worldwide downloads @ 14/3/16)
Software	S. P. Smith E. Southgate D. Hickmott R. Bille L. Stephens T. Studley	13/1/2016	 Sentence Hero. Do punctuation and grammar leave you feeling flat? Grab an energy boost with the Sentence Hero game. It's the fun, fast and easy-to-play way to help you get your writing right. Available free to download. (8470 worldwide downloads @ 14/3/16)

TYPE	AUTHOR	DATE OF PUBLICATION	PUBLICATION DETAILS
Report	E. Southgate S. P. Smith	20/3/2016	Practice guide: Ideas for using Apostrophe Power and Sentence Hero. <i>DICE Report Series</i> , Number 2. Newcastle: DICE Research. http://dice.newcastle.edu.au/DRS_2_2016.pdf

3. ACQUITTAL REPORT (Conditions of Grant, clause 6.4(e), clause 6.7-8 of Part A)

Have you fully expended the Grant Funds provided under the Conditions of Grant?

Yes No

[If the answer is No, you must state:

- the amount of the underspend, and*
- the reason for the underspend.]*

[Complete the Acquittal Report template and attach it to this Final Report.]

**IMPORTANT NOTICE - Unspent 2014 HEPPP Partnership Grant Funds*

- Grant recipients must fully expend these 2014 National Priorities Pool funds in the project period for which the grant is made and report on this expenditure to the Commonwealth, including the amount of any unspent funds.*
- If a provider fails to spend the full amount granted it in respect of a year, the unspent funds may be recovered by the Commonwealth.*

DECLARATION

I declare that:

- I am authorised by the university to sign this Declaration on its behalf, and
- to the best of my knowledge, the information that I have provided in the **Final Report** and **Acquittal Report** for the HEPPP 2014 National Priorities Pool project *The Literacy App: An M-Learning Tool for Low SES Undergraduate Students* is true, correct and accurate in all particulars.

I understand that:

- The provision of false or misleading information or the making of false or misleading statements to the Commonwealth is a serious offence under the *Criminal Code Act 1995 (Cth)*.
- If any actual or potential conflict of interest arises, I must notify the Commonwealth immediately in writing of the facts giving rise to the actual or potential conflict of interest and to take such steps as the Commonwealth may require so as to resolve or otherwise deal with any conflict of interest that may arise.

Title Professor
Name Andrew Parfitt
Position Deputy Vice-Chancellor (Academic)
Signature