

Learning by design: bringing poster carousels to life through augmented reality in a blended English course

Mehrasa Alizadeh¹, Parisa Mehran²,
Ichiro Koguchi³, and Haruo Takemura⁴

Abstract. In recent years, there has been a burgeoning interest in Augmented Reality (AR) technologies, especially in educational settings to edutain (i.e. educate and entertain) students and engage them in their learning. This study reports the results of the use of an AR application called BlippAR to augment poster carousel tasks in a blended English course offered at Osaka University. Both quantitative and qualitative data were collected through a usage experience questionnaire, an open-ended feedback form, and observations. The implemented AR application is described, and the overall positive user experience is reported, along with displaying a sample of collaborative student-generated AR posters. The rewards and challenges of having students design AR content are also discussed.

Keywords: augmented reality, AR, BlippAR, situated learning, learning by design, learner-generated AR content.

1. Introduction

AR, a technology that allows virtual objects to be superimposed onto the actual world in real time, has emerged as one of the most promising technologies for education, which can edutain students and engage them in their learning. AR apps, such as Aurasma, Wikitude, Layar, and Augment, are a type of mobile application that allow users to overlay digital information onto the physical world by attaching photos, texts, audio, and/or videos. These applications are gaining popularity among English language teaching practitioners and researchers (e.g. Reinders &

1. Osaka University, Osaka, Japan; alizadeh.mehrasa@lab.ime.cmc.osaka-u.ac.jp

2. Osaka University, Osaka, Japan; mehran.parisa@lab.ime.cmc.osaka-u.ac.jp

3. Osaka University, Osaka, Japan; ikoguchi@lang.osaka-u.ac.jp

4. Osaka University, Osaka, Japan; takemura@cmc.osaka-u.ac.jp

How to cite this article: Alizadeh, M., Mehran, P., Koguchi, I., & Takemura, H. (2017). Learning by design: bringing poster carousels to life through augmented reality in a blended English course. In K. Borthwick, L. Bradley & S. Thouéсны (Eds), *CALL in a climate of change: adapting to turbulent global conditions – short papers from EUROCALL 2017* (pp. 7-12). Research-publishing.net. <https://doi.org/10.14705/rpnet.2017.eurocall2017.680>

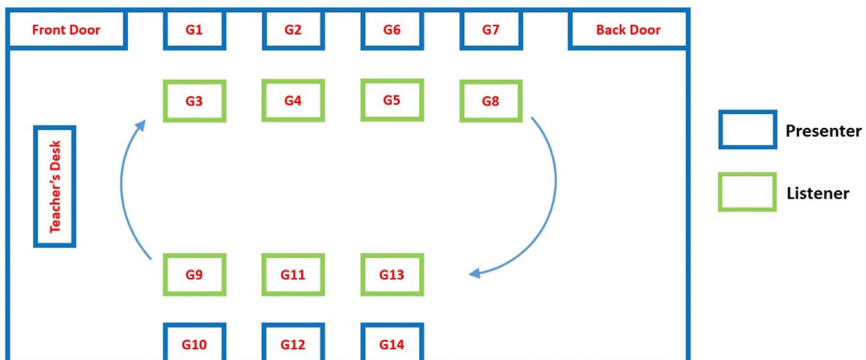
Lakarnchua, 2014), as AR use is aligned with recent learning theories: for example, constructivist learning, situated learning, game-based learning, and inquiry-based learning.

2. Project description: an AR-based exploratory case study at Osaka University

A fifteen-week blended course of English for General Academic Purposes (EGAP), titled Osaka University Global English Online (OUGEO), was designed, developed, and implemented at Osaka University for second-year undergraduate students. Out of the 15 weeks, ten weeks were purely online, and five were face-to-face. Poster presentation carousel was selected as the term project, which allowed the students to go around, visit posters, listen to their peers' presentations, ask/answer questions, and develop their oral fluency. An AR app, called BlippAR, was also chosen to be introduced to the learners to create learner-generated (aka learnAR-generated) AR posters.

Initially, through a technology survey, it was found that all of the students owned a smartphone. A face-to-face training session both on poster presentations and on using BlippAR to create Blippings was then held (the slides are available at <https://www.slideshare.net/parisamehran/blippar-tutorial>), and the students formed 14 groups of five to six members each to present at two poster sessions. For the purpose of this paper, we focused on data collected during the first poster session where seven groups presented their posters in three rounds to three different listener groups (see Figure 1).

Figure 1. Class arrangement for the first poster session



Each presenting group was asked to select a global theme, create a poster based on the topic, and find or make a video related to the content to overlay on the poster using BlippAR. This paper reports on the past AR experiences of the learners, their views on the use of AR, specifically BlippAR, and their estimate of AR use for their future projects. Some samples of learner-generated AR content are also provided.

3. Method

3.1. Participants

The total number of the students participating in the current study was 71, of which 35 (49.3%) were males and 36 (50.7%) were females, with a mean age of 19 (ranging from 18 to 22). The participants were all undergraduate students majoring in humanities, mainly from the Faculties of Letters, Law, and Economics. Fifty-six of them (78.9%) reported that they had never experienced using AR, and 67 of them (94.4%) said that they had not known about BlippAR.

3.2. Instrumentation

A usage experience questionnaire (adapted from [Chow, Thadani, Wong, & Pegrum, 2015](#); [Davis, 1989](#); [Venkatesh, Morris, Davis, & Davis, 2003](#)), an open-ended feedback form, and observations were utilized to collect data on respondents' attitude toward the use and experience of AR.

4. Findings

After being trained on Blipp creation, the students designed and generated their interactive AR-based posters. [Figure 2](#) illustrates a sample of student-generated AR content.

Despite the fact that about half of the students found BlippAR difficult to use, the majority of them believed that working with BlippAR was fun and that it made learning English more interesting, which led to their overall positive usage experience with BlippAR. However, a majority of the students felt that using BlippAR would not directly contribute to the improvement of their English. [Table 1](#) shows the responses to the usage experience questionnaire.

Figure 2. Sample student-generated AR-based poster⁵

Mother's Day

Group 14

Introduction

Today, we would like to introduce Mother's Day of the world. In Japan, we have the Mother's Day on second Sunday of May. We give carnation or some gifts for mother and say mother "Thank you." because mothers work and do housework for their family. By the way, in other countries, are their mother's days? When? How? We searched Mother's Day of the world.

<https://goo.gl/ayzwxR>

America

During the Civil War, a woman called Ann Jarvis worked to help the soldiers regardless of enemies or allies. On 12th May, 1907, her daughter Anna held a party in memory of her mother and gave the participant white carnations. This is the origin of Mother's Day. In 1914, it is enacted as a national holiday to honor mothers held on the second Sunday in May. These days, people give their mothers various presents including carnations.

<https://goo.gl/JdF9Gw>

France

The last Sunday in May or the first Sunday in July. In 1806, Napoleon I (1769-1821) created a national holiday for mothers. However, he created this holiday to praise the role of giving birth rather than to thank mothers because the population had been decreasing through many wars. In 1950, Mother's Day is established officially affected by American mother's Day. French send flowers as same as Japan, but they never send carnations because carnations are regarded as flowers to offer on a grave. There aren't particular flowers, but people often give roses, Chinese peonies (芍薬 in Japanese) and chrysanthemums (菊 in Japanese) to their mothers.

<https://goo.gl/pmCrXh>

China

Background:
Mother's day is generally celebrated on the second Sunday in May in China. It is a holiday that was first celebrated regionally in Hong Kong and Macau. After the Chinese economic reform in 1979, the Chinese mainland began to embrace this holiday. As the imported holiday of Mother's Day aligned with traditions of filial piety in China, it became popular soon during people who are born after 1980s.

Activities:

- Schools and colleges arrange campaigns to raise funds to meet the needs of their mother.
- Project Happiness, one aimed at helping poor mothers, was launched in 1995 by the China Population Welfare Foundation, Family Planning Association of China and China Population News.
- The Meng Mu Culture Festival in Taigu, Shangxi Province, was held on May 12, 2013 to celebrate and promote Mother's Day in China.

<https://goo.gl/xHMym1>

Egypt

Mother's day in Egypt is on 21st March. It begins in 1956. Mustafa Amin, she is Egyptian journalist, wrote American Mother's Day in her books. It is origin. On Mother's day, children gives present for mother. In Egypt, children is often dancing for mother on this day.

<https://goo.gl/y9Sjkz>

Summary

In Japan, the origin of Mother's Day is "Mother's Day" of America. And there are various Mother's Days in the world. The date of Mother's Day and customs are different. However, many countries have Mother's Day. Although there are some differences, we respect our mother and appreciate mother's hard work.

5. To watch the poster come to life, download and install the mobile application BlippAR, then go to settings and enter the following code: 238935. Finally scan the image shown by a red arrow in Figure 2 to watch the video overlaid on it.

Table 1. Usage experience questionnaire results

Items	Strongly Disagree	Disagree	Agree	Strongly Agree
I find BlippAR easy to use.	7.0%	43.7%	43.7%	5.6%
BlippAR makes learning English more interesting.	4.2%	26.8%	57.7%	11.3%
Working with BlippAR is fun.	2.9%	22.5%	57.7%	16.9%
I do not like working with BlippAR.	11.3%	57.7%	26.8%	4.2%
My overall usage experience with BlippAR is good.	2.8%	38.0%	56.3%	2.9%
Using BlippAR would improve my English.	8.4%	62.0%	26.8%	2.8%

Regarding the subsequent use of BlippAR, about half of the students (52.1%) were not sure whether they would use BlippAR again outside the class, and 28.2% of them said they were not intending to.

The qualitative data (i.e. open-ended feedback and observations), also revealed that, to a large number of students, AR could make the process of English learning interesting and fun, but it could not directly improve their English. A few students believed that AR could improve their English skills as it provided more opportunities for getting exposed to English and it engaged all their auditory and visual senses.

5. Discussion

Overall, considering both quantitative and qualitative findings, a fairly positive AR user experience was reported by the participants of this study. This result is roughly in line with those of previous studies (e.g. [Chow et al., 2015](#); [Küçük, Yılmaz, & Göktaş, 2014](#)) which investigated the attitude of students toward the use of AR and showed a more positive attitude compared to the findings of this study. The participants of the current study found their AR experience as interesting and pleasant, however about half of them also found it difficult to use due to technical glitches (e.g. the long loading time for some overlaid videos). [Li, Chen, Whittinghill, and Vorvoreanu's \(2014\)](#) study also revealed that technical issues decreased users' satisfaction and diverted their attention from the learning task. Despite having technical challenges, this study suggests that AR could to some extent engage students and motivate them to learn (items 2 and 3). As pointed out by [Chow et al. \(2015\)](#), AR can improve the level of students' engagement in learning, and as mentioned by [Reinders and Lakamchua \(2014\)](#), AR has the

potential to increase students' motivation, and boosting engagement and motivation can eventually facilitate the improvement of English language skills.

6. Concluding remarks and future vision

In this study, AR was used to augment poster carousel tasks in a blended English course. Notwithstanding the technical difficulties, by and large, the quantitative findings and the qualitative feedback and observations indicated that a majority of the participants engaged in AR and found the activity a rather enjoyable experience. Further research will determine how using AR and getting students involved with generating their own AR-based content may improve the effectiveness of language learning, as well as learners' motivation. With advances in new technologies, it will be increasingly easier to bring more of AR to the classroom in the near future, and interactive, engaging learning environments can be created to enhance learning and meet the needs of students in the 21st century.

References

- Chow, E. H. C., Thadani, D. R., Wong, E. Y. W., & Pegrum, M. (2015). Mobile technologies and augmented reality: early experiences in helping students learn about academic integrity and ethics. *International Journal of Humanities, Social Sciences and Education*, 2(7), 112-120.
- Davis, F. D. (1989). Perceived usefulness, perceived ease of use, and user acceptance of information technology. *MIS Quarterly*, 13(3), 319-340. <https://doi.org/10.2307/249008>
- Küçük, S., Yılmaz, R. M., & Göktaş, Y. (2014). Augmented reality for learning English: achievement, attitude and cognitive load levels of students. *Education and Science*, 39(176), 393-404. <https://doi.org/10.15390/EB.2014.3595>
- Li, S., Chen, Y., Whittinghill, D. M., & Vorvoreanu, M. (2014). A pilot study exploring augmented reality to increase motivation of Chinese college students learning English. Paper presented at the 2014 ASEE Annual Conference, Indianapolis, IN. <https://goo.gl/LLm3GX>
- Reinders, H., & Lakaruchua, O. (2014). Implementing mobile language learning with an augmented reality activity. *Modern English Teacher*, 23(2), 42-50. <http://innovationinteaching.org/wp-content/themes/default/images/met2014.pdf>
- Venkatesh, V., Morris, M. G., Davis, G. B., & Davis, F. D. (2003). User acceptance of information technology: toward a unified view. *MIS Quarterly*, 27(3), 425-478.

Published by Research-publishing.net, not-for-profit association
Contact: info@research-publishing.net

© 2017 by Editors (collective work)
© 2017 by Authors (individual work)

CALL in a climate of change: adapting to turbulent global conditions – short papers from EUROCALL 2017
Edited by Kate Borthwick, Linda Bradley, and Sylvie Thoušny

Rights: This volume is published under the Attribution-NonCommercial-NoDerivatives International (CC BY-NC-ND) licence; individual articles may have a different licence. Under the CC BY-NC-ND licence, the volume is freely available online (<https://doi.org/10.14705/rpnet.2017.eurocall2017.9782490057047>) for anybody to read, download, copy, and redistribute provided that the author(s), editorial team, and publisher are properly cited. Commercial use and derivative works are, however, not permitted.

Disclaimer: Research-publishing.net does not take any responsibility for the content of the pages written by the authors of this book. The authors have recognised that the work described was not published before, or that it was not under consideration for publication elsewhere. While the information in this book are believed to be true and accurate on the date of its going to press, neither the editorial team, nor the publisher can accept any legal responsibility for any errors or omissions that may be made. The publisher makes no warranty, expressed or implied, with respect to the material contained herein. While Research-publishing.net is committed to publishing works of integrity, the words are the authors' alone.

Trademark notice: product or corporate names may be trademarks or registered trademarks, and are used only for identification and explanation without intent to infringe.

Copyrighted material: every effort has been made by the editorial team to trace copyright holders and to obtain their permission for the use of copyrighted material in this book. In the event of errors or omissions, please notify the publisher of any corrections that will need to be incorporated in future editions of this book.

Typeset by Research-publishing.net

Cover design based on © Josef Brett's, Multimedia Developer, Digital Learning, <http://www.eurocall2017.uk/>, reproduced with kind permissions from the copyright holder.

Cover layout by © Raphaël Savina (raphael@savina.net)
Photo "frog" on cover by © Raphaël Savina (raphael@savina.net)

Fonts used are licensed under a SIL Open Font License

ISBN13: 978-2-490057-04-7 (Ebook, PDF, colour)

ISBN13: 978-2-490057-05-4 (Ebook, EPUB, colour)

ISBN13: 978-2-490057-03-0 (Paperback - Print on demand, black and white)

Print on demand technology is a high-quality, innovative and ecological printing method; with which the book is never 'out of stock' or 'out of print'.

British Library Cataloguing-in-Publication Data.
A cataloguing record for this book is available from the British Library.

Legal deposit: Bibliothèque Nationale de France - Dépôt légal: décembre 2017.