



## Edo Forsythe & Paul Raine

In this column, we explore the issue of teachers and technology—not just as it relates to CALL solutions, but also to Internet, software, and hardware concerns that all teachers face. We invite readers to submit articles on their areas of interest. Please contact the editor before submitting.

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## Using AR to Teach Vocabulary

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Vocabulary is often one of the trickier points of language to teach students in a fun and engaging way. Rote memorization of lengthy, paper-based lists seems to be the default method of learning for many students, which does not guarantee that learners will have a functional understanding of the target language in the longer term. Thus, fresh perspectives to teaching and learning vocabulary need to be adopted for the classroom. One avenue is through the use of newer technology like augmented reality (AR)—digital content overlaid onto the real world (see fig. 1). Additionally, using AR leads to “playful experimentation as a pathway to creativity” (Resnick & Robinson, 2018, p. 17), which may lead to more authentic language production. AR provides a wow factor with free and easy to use apps like *HP Reveal* <[studio.hpreveal.com/landing](http://studio.hpreveal.com/landing)>.

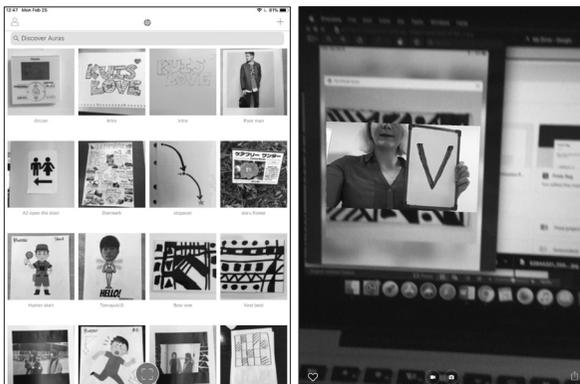


Figure 1. (Left) Homepage of HP reveal. (Right) HP reveal AR overlay playing.

With this AR app, the task of learning vocabulary can effectively be gamified in a way that will require

the learner to take risks to complete the task and offer a sense of satisfaction by overcoming the task’s challenges. HP Reveal also allows learners to show their verbal skills to complete a game, in which the learner feels the need to use their knowledge while adjusting language for different contexts as suggested by Gee (2008).

### How Does it Work?

HP Reveal is an AR app that allows the user to apply a digital overlay of either an image or a video onto the physical world. HP Reveal is available in both the Apple App store and the Google Play store. To use this app, learners will need either a mobile device or tablet with the app installed. Learners create their own content using a video for this task, so it is also important that the device can record the necessary video.

### Classroom Application

Initially, this activity will take one full class period for the learners to create the different media elements to play the game, and another period for the game play itself. After the learners have taken part in this activity once, the preparation and game play could be contained within one class period in the future. The AR activities explained below have been divided into the tasks the learners need to achieve during two lessons.

#### Lesson One:

Learners will be given one or two vocabulary words to research from a list that is relevant to the unit being taught. They then produce their own definition for the word and explain its part of speech. The part of speech is important to include due to the different usages of the same words in English. For example, when teaching a travel unit, the word *book* could be a noun meaning something to read or a verb meaning to make a reservation.

Next, learners share their definition with each other. There are multiple ways to do this: learners can add the words to a shared Google document, they can write their word on the board, or through

a question-and-answer communicative activity. For example, learners walk around the room and ask each other which word they found the definition to—this allows learners to have speaking and listening practice of the vocabulary, and reinforces understanding of the definition through active engagement. After they have shared all the words, the learners are given an A4 sheet of paper to draw a visual representation of their designated word. Once the image is completed, the learners should record a video saying the word, part of speech, definition, and repeating the word at the end of the video. Videos tend to be 10–15 seconds long (see an example at <http://tinyurl.com/y55497a9>).

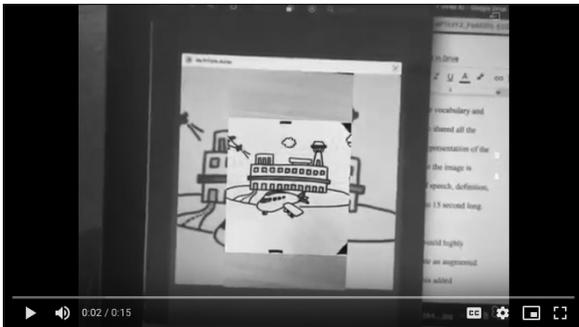


Figure 2. Screenshot of a student video.

Learners will then be ready to create an overlay—the digital image that is associated with the static image—using HP Reveal. I would highly recommend creating an instructor-made video tutorial on how to create a trigger on HP Reveal so learners can negotiate the technology with this added scaffolding. An instructional video I made is available at <http://tinyurl.com/y5j9f7su>.

After learners watch the video, they should be able to create their overlays from their original A4 image, and the video they have previously recorded. This task may take some time when the first-time learners do it, so the teacher should move around the class to help and encourage students to help each other. Once the augmentations are complete, the images are collected and learners review the words for homework using a worksheet (see Appendix 1 Travel Unit Vocab Worksheet) as they normally would (i.e., without the images associated with the unit vocabulary).



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### JALT2019

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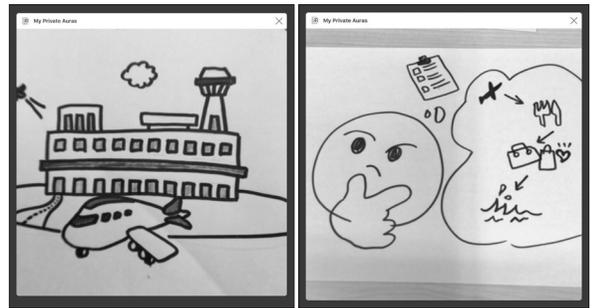


Figure 3. Student examples of images from Travel unit vocabulary list. (Left) Terminal. (Right) Itinerary.

### In Between Lessons:

The teacher will need to make copies of learners' images, reducing the image size to that of playing cards. There should be one set of cards for each group of four students in your class.

### Lesson 2:

Groups of four students will be given a set of all the images and they will play a vocabulary game. There are two rounds in the game. The first round is to see if the learners can identify the word from the image. Learners turn the cards over one by one and the first one to shout out the correct vocabulary word gets to keep the card. If there is disagreement as to which word the image is, learners watch the augmentation (see <http://tinyurl.com/y4r9hx3l> for a game demonstration). The person with the most cards at the end of the game wins the round. The second round is similar, but instead of only saying the word they must include the definition. As they have already seen the images and know the word, this is an added challenge. The augmentations are watched again to check the correct definitions. Again, the winner is the person with the most cards at the end of the game.

### Helpful Tips

There may be a few logistical issues when learners first make their own AR targets. First, remind learners that images need multiple sharp corners and cannot be too simple, and that AR does not detect color. Most importantly, targets that are too circular cannot be read by the app (see Figure 4 for AR target examples). This is an inherent issue with AR in general. Another reoccurring issue is in regards to voice quality. Many times, videos that learners made were extremely quiet. This may be due to the learner themselves being shy, or their distance from the microphone during the

recording. Learners should therefore be reminded to use a louder voice during the recording.

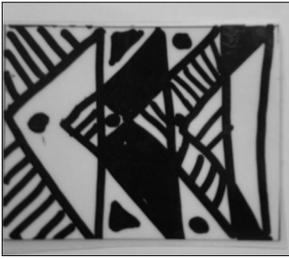


Figure 4. (Left) A good example of an AR target. (Right) A bad example of an AR target.

### Conclusion

Overall, this application of AR technology in the classroom has proven incredibly effective and extremely easy to use for learners and instructors alike. Throughout all steps of the creation of the AR materials, the room was very lively, and learners' engagement with the task increased. This conforms with the pedagogy of the SAMR model (Puentedura, 2014) and Bloom's digital taxonomy (Anderson & Krathwohl, 2001), in which students who have the chance to create their own learning materials may be more engaged, which can lead to high-order thinking skills. Learners actively analyzed and evaluated the game during its creation to make it better, while also having an overall positive reaction to the task of learning new vocabulary words.

### References

Anderson, L. W., & Krathwohl, D. (2001). *A taxonomy for learning, teaching, and assessing: A revision of Bloom's taxonomy of educational objectives*. New York: Longman.

Gee, J. P. (2008). *Good video games good learning: Collected essays on video games, learning, and literacy*. New York: P. Lang.

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### Appendix

Note: The appendix is available as a downloadable PDF file from the online version of this article at <<http://jalt-publications.org/tlt/departments/tlt-wired>>

### Vocab AR Game: Travel Unit

You and your partner will have to make a visual representation of the vocabulary list below. Each group will be responsible for four words. You need to do the following.

1. Identify the part of speech (noun, verb, adjective, adverb)
2. Give a simple, easy-to-understand definition (no dictionary definitions)
3. Draw a picture to help with understanding

|   |
|---|
| 1. Vacation                                   |
| 2. Luggage                                    |
| 3. Itinerary                                  |
| 4. Vaccination                                |
| 5. Passport                                   |
| 6. Visa                                       |
| 7. Resident                                   |
| 8. Board                                      |
| 9. Customs                                    |
| 10. Get off                                   |
| 11. Book                                      |
| 12. (Airport) terminal                        |
| 13. Boarding card                             |
| 14. Accommodation                             |
| 15. Hotel                                     |
| 16. Youth hostel                              |
| 17. Bed and breakfast                         |
| 18. Airbnb                                    |
| 19. Reservation                               |
| 20. Direct flight                             |
| 21. Transfer                                  |
| 22. Stopover                                  |
| 23. Tourist                                   |
| 24. Check-in                                  |
| 25. Via                                       |
| 26. Get out of                                |
| 27. Arrive / arrival                          |
| 28. Depart / departure                        |
| 29. Destination                               |
| 30. Package tour                              |
| 31. 3 days and 2 nights / 4 days and 3 nights |
| 32. Facilities (hotel, venue, etc.)           |

Editor's Note: Make sure you join us at the PanSIG and JALTCALL2019 conferences to get more ideas about incorporating Mixed, Augmented, and Virtual Realities (MAVR) activities into your language lessons! These conferences always provide a wealth of ideas to keep your lessons Wired!

**Vocab AR Game: Travel Unit**

You and your partner will have to make a visual representation of the vocabulary list below. Each group will be responsible for four words. You need to do the following.

1. Identify the part of speech (noun, verb, adjective, adverb)
2. Give a simple/ easy to understand definition (no dictionary definitions)
3. Draw a picture to help with understanding

|   |
|---|
| 1. Vacation                                   |
| 2. Luggage                                    |
| 3. Itinerary                                  |
| 4. Vaccination                                |
| 5. Passport                                   |
| 6. Visa                                       |
| 7. resident                                   |
| 8. Board                                      |
| 9. Customs                                    |
| 10. Get off                                   |
| 11. Book                                      |
| 12. (Airport) terminal                        |
| 13. Boarding card                             |
| 14. Accommodation                             |
| 15. Hotel                                     |
| 16. Youth hostel                              |
| 17. Bed and breakfast                         |
| 18. Airbnb                                    |
| 19. reservation                               |
| 20. Direct flight                             |
| 21. Transfer                                  |
| 22. stopover                                  |
| 23. Tourist                                   |
| 24. Check-in                                  |
| 25. Via                                       |
| 26. Get out of                                |
| 27. Arrive / arrival                          |
| 28. depart / departure                        |
| 29. Destination                               |
| 30. Package tour                              |
| 31. 3 days and 2 nights / 4 days and 3 nights |
| 32. Facilities (hotel, venue, etc)            |