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Integrating Augmented Reality In Learning Thai Vocabulary For Adult Learners In The US Higher Education

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THU: Integrating Augmented Reality In Learning Thai Vocabulary For Adult Learners In The US Higher Education (Payungsak Kaenchan)

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Payungsak Kaenchan
24 December 2017

Extra content

Augmented Reality (AR) has gained increasing attention in the research domain and classrooms. In a nutshell, AR is defined as a technology that superimposes interactive, computer-generated visuals and other multimedia elements onto real-life surroundings, allowing simultaneous viewing and interacting between the virtual and real objects in attempt to enhance users' perceptive experiences (Dunleavy, Dede, & Mitchell, 2009; Ludwig & Reimann, 2005).

The novel uses of AR could provide learners with a new channel to perceive the reality of the world to support and enhance ubiquitous learning in either formal or informal settings (Azuma, 1997). Lakarnchua and Reineders (2014), Dunleavy et al. (2009), and Kerawalla et al. (2006) noted that AR learning activities could be considered educationally useful for student learning as it could enhance their constructive learning, collaboration with peers, and self-regulation, which are facilitated by the teacher. Besides, as to enhance digital literacy in the 21st century, AR technology provides a digitally literate learner with opportunities to use diverse technological software and hardware appropriately and effectively to retrieve, evaluate, and interpret perceived information to render ethical and appropriate judgments of the quality of such information (Klopfer, 2008).

Nevertheless, AR has drawbacks. For instance, in terms of pedagogical challenges, AR has posed constraints due to its insufficient inflexible content or resources. Also, the most frequently reported limitation of AR in development is student cognitive overload as students were often overwhelmed with the complexity of the activities (Dunleavy et al., 2009).

The provisional title for this conference presentation is '*Integrating Augmented Reality In Learning Thai Vocabulary For Adult Learners In The US Higher Education*'. A rationale for the conference presentation, under the theme of Innovation, is to explore how AR, in its infancy, pedagogically benefits learning and how learners perceive its usefulness, especially in the higher education setting. Another rationale is to employ innovative technologies to tailor to the

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persistent learners' needs in the Beginning Thai courses. It has occurred that the learners had problems with and limited access to resources that help them memorizing and practicing Thai words. As a result, AR-aided interactive supplementary resources may help improve learning performances and may be a refreshing alternative learning resource.

To address the educational potential and usefulness of AR in language curricula, the conference presentation will provide an extensive walkthrough of the production and of the pilot demonstration phases of AR-enhanced supplementary learning resources in the form of Thai vocabulary flashcards, for a cohort of American students at Northern Illinois University who take elective Beginning Thai courses in the academic semester of Spring 2018. The presentation will also feature how difficulties or problems are tackled, how the project progress has reshaped or changed over the course of project time, and how project's implications can shed light to future developments both in the pilot and other contexts. Lastly, a suggested list of useful AR and other technological tools used in the project will be given as a reference for those interested in adopting the approach in their classrooms.

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Payungsak Kaenchan
12:24 on 10 January 2018 (Edited 12:25 on 10 January 2018)

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Discussion (17)   Links (0)   Academic References (0)

Mike Lyons
8:50am 17 January 2018 Permalink

Will you show a variety of techniques for using AR to teach vocabulary?

Mr Jonathan G Brown
3:09pm 18 January 2018 Permalink

Playing devil's advocate here: do you think, given that AR technology is still in its infancy, that it has reached the stage where it can genuinely enhance learning - or is it, for now, only an interesting novelty with potential?

Katherine Hinchey
2:38pm 4 February 2018 Permalink

I've been excited to attend your presentation ever since I tried out the AR on your poster -- hghly encourage others to download the free app and give it a try! **Reminder to everyone:** To play along, you need to install Zappar on your phone (iPhone, >Android), and then point it to the image at 2:03 on the poster.

Did you notice The New York Times newspaper is now expanding into AR? It was neat to see what they are able to new in the journalism arena, and it'll be neat to see what you propose for including AR in language studies!

I'd love it if you would share some tips-and-tricks or best-practices based on your experiences while working on your project, something useful for the person who hasn't yet created AR.

Katherine Hinchey
2:42pm 4 February 2018 Permalink

My links didn't make it. Here they are again:

▶ Zappar for iPhone
▶ >Zappar for Android

Katherine Hinchey
4:23pm 4 February 2018 Permalink

Seriously?! >Zappar for Android.

Katherine Hinchey
4:23pm 4 February 2018 [Permalink](#)

Cloudworks won't take this hyperlink, so here's the URL for Zappar for Android: https://play.google.com/store/apps/details?id=com.zappar.Zappar&hl=en

Katherine Hinchey
4:23pm 4 February 2018 [Permalink](#)

Cloudworks won't take this hyperlink, so here's the URL for Zappar for Android: https://play.google.com/store/apps/details?id=com.zappar.Zappar&hl=en

Denise McDonough
6:46pm 13 February 2018 (*Edited 6:49pm 13 February 2018*) [Permalink](#)

Hi, I really liked your early submission of math students using the cards that seemed to dance on the table in front of them. It was fascinating - thanks for sharing it. Until I saw that I thought AR was only for scifi and gamers.
I have struggled to learn French and now Italian - still rubbish :-) When learning another language anything that help you remember it is useful. Recently I started using Duolingo and it is great at breaking down words and using a digital flashcard method in very small daily lessons. It makes it a engaging and fun so I am more likely to practice.

How does yours align with this type? Thanks

Dr Simon Ball
10:20am 16 February 2018 [Permalink](#)

Hi Yungie

Well done on a great recorded presentation - such a shame you couldn't be with us live, but your recording did a great job! Here is a summary of the comments and questions you received following your presentation (including those you may have addressed verbally). Please respond in whatever way you choose.

Best wishes

Simon

⯈ Great presentation, I am now thinking of how I can use ZapWorks at work
⯈ martin mentioned using digital tools to recruit research participants. I wonder, givven the problems accessing US students, if they lazyweb might provide a way of finding students for usability testing?
⯈ khob-kun-Ka, Yungi.
⯈ Thank you Payungsak. A nice polished presentation. Your inclusion of the video

made it feel like you were with us in real time.

- Nice presentation! How long does it take to produce a flashcard? Are time constraints a major barrier to implementation?
- could do user testing online
- How did you find weebly as a platform to host your cards? rather than perhaps wordpress
- Is there a way to build on this by encouraging collaborative work? A lot of language learning happens by people using the language together. That embeds it well. So maybe exercises for teachers to use the flashcards in class, or for students to get together in groups and use them might help?

Helen Dixon
4:34pm 17 February 2018 Permalink

Great presentation, Yungi. I had never really considered AR for language learning so this has encouraged me to think outside the box! Definitely something I will look into over the coming months and an area that has a lot of potential. Have you come across any good examples of it being used for more vocational subjects like construction?

Helen

Payungsak Kaenchan
12:25am 18 February 2018 Permalink

Mike,

I am sorry I respond to your question very late. In my presentation, I brielfy showed how I made a flashcard myself. The whole process was a bit more complex than what you saw. When it comes to design, concerns about useability and user interface play a huge role; the font needs to be big and clear, the background is light color and the AR content navigation easy to use.

To your questions about technique to teach vocabulary, I guess I may answer this based on some research-based approach by Fisher and Frey (2008). Fisher and Frey mentioned that in addition to explicit instruction of vocabulary, the teacher should also encourrage students to learn vocabulary collaboratively in guided instruction. Later they can lead their own independent study. Marzano's Six Steps Process for Teaching Vocabulary also include 'Apply[ing] in learning games' as the sixth step in stimulating students' vocabulary learning ability. It is mentioned that students should be involved in some sort of games or activities in which they learn new terms. I guess my project somehow incoporates these two principles to some extent.

And if you you ask me about 'what' to teach about a word, I may say that vocabulary has depth and breadth. I will include explicit meanings, images (if applicable), pronunciation, sample sentences as a basic. Then to give some breadth, I may add synonyms, collocations, antonyms, idioms and others.

Payungsak Kaenchan
12:47am 18 February 2018 Permalink

Jonathan,

You've asked a Big Question! And my answer is that AR is still and will be for the next few years just a novelty in technology that won't find its easy way into school walls. As you may be aware that AR and VR are a new fad that starts to be adopted in some schools (with budget). However, considering that the technology is young and AR software/applications/tools are very few and of course costly, the general public will find it a bit out of reach to afford it and taste its functionality. A good example is me. As a techn enthusiast, I still find it time consuming and not easy to learn to use ZapWorks and everything else. You got to have resources, time, and effort to learn. Some of my Thai students do not even know what AR is; they have actually never heard of it!

I think before we talk about whether or not AR improves learning, we should start talking about introducing the technology to schools and teachers and equip them with knowledge and skills to use AR. Professional training and development is super cruicial in my opinion. We need to teach teachers to see how AR fits their curriculum and lesson plans, how their lesson plans can be enhanced by adopting AR at some point. As I think tech is to supplement, not to replace teachers' long-held instructional approaches. And this job is not teachers' sole responsibility. Technicians and educational technologists should help bridge tech and pedagogy. Another area I find useful prior to AR implementation is user acceptance. We need to see how students perceive and accept a new technology. Do they like it? How do they use it? Is there any constraints? Does it present ease of use? These are, for now, more important that whether new technologies can improve learning.

And another big barrier is infrastructure. High speed Internet and AR resources and access are needed and they are oftentimes expensive although a number of free apps are being added on App Store and Google Play. These free apps usually are 'readers', not AR 'creators'.

I can go on and on with this, but I would stop here. But I could say we have plenty of areas on AR to explore and probably in the next five years when it's stable we can actually conduct a study to see if students improve learning by using AR.

Payungsak Kaenchan
1:01am 18 February 2018 Permalink

Katherine,

Thank you so much and I am happy you have fun with my AR poster! I tried to see if I could give some tips and tricks to use AR, and my best advice is simply to use it. Try it for once if you have time. As a novice AR user, I also felt intimidated to learn about it and even more intimidated after a long trial with several tools (Wikitude, Aurasma, Layar, etc.) But ZapWorks is a good and easy one to start with. I bet you may have already created a ZapWorks account. So go ahead and try it. Create your first AR business card or a course syllabus. I even think about providing a workshop on ZapWorks for 4th year students so that they can use it for career preparation (creating interactive resumes and business cards or even portfolios). This can be a great tool to introduce to any class of any discipline.

Payungsak Kaenchan
1:13am 18 February 2018 Permalink

Denise,

Thank you for the question about Duolingo. Some of my colleagues use it. If asked from a perspective of AR and VR, I think Duolingo is more a pure mobile-based learning app that should be aligned with VR (Virtual Reality). That is, the content is purely, digitally computer-generated. Another VR example is Wii games. However, my AR flashcards should be placed on an AR side on a continuum of Mixed Reality. That is it blends computer-generated content with real surroundings or objects, merging them together. One difference of AR and VR here might be in terms of sense of perception among learners, especially younger learners. They learn by seeing, touching, sounding, for intance. And they can become more engaged with multimodal learning materials. For now, I guess AR can bring into classrooms 'new fun and motivation.' But to make its potential last, teachers might have to make learning experience meaningful and collaborative.

Payungsak Kaenchan
2:14am 18 February 2018 (*Edited 2:29am 18 February 2018*) Permalink

 H818 friends,

Thank you so much for your questions. I am sorry I could not attend the live conference due to an inevitable obligation. Here are my answers to your questions from the live conference.

Question 1. To recruit participants, I guess there are so many ways these days. My friend used Amazon M Turk, a crowdsourcing web, to look for people to do tasks you want. Many research studies search for prospective participants from here and it is valid. But for my project here, I employed a purposive sampling in that I specifically aim at students at NIU who take Thai courses. So outside participants might be invalid for my objective for now (but of course this could be expanded in future research).

Question 2. How long does it take to make a flashcard? Good question and I really wanted to talk about this. At first, without skills with ZapWorks, I took me at least 20 minutes to figure out on my own the ways around the software and how to make a successful, working flashcard. This excluded the time you spent on making aduio and video recordings for embedding. So practially, overall time for a card is around 40 minutes at first! Yet, as I foresaw that it was going to take three Ice Ages to finish the whole project, I started creating my own 'storyboard'. I listed steps needed. And I separated the tasks.

1. First, I created 75 plain flashcards with words on them on PowerPoint and Canva.

2. Then, I created 75 unique QR codes to merge onto each flashcards, using Pixlr.

3. Next, I recorded 75 pronunication audio files on iPhone and exported them on ZapWorks.

4. Next, I video-recorded my 75 handwritings of words on iPad using Camtasia.

5. And later, I created nevigation menu on each of the 75 flashcards (which took half day when you are well adapted to the software).

6. Once all the flashcards ready, I inserted the audio, video and text elements on each one of them. This took 2 whole patient days.

7. I also spent a day or two to check all technical errors and another few days to create a dedicated website to host the flashcards.

All these steps can be potentially reduced to a short period of time once you know the way around the process and the software. I think it was worth it because now if you ask me to create a piece of work on ZapWorks, I won't need 30 minutes. I will need like 10 minutes to finish one.

[Payungsak Kaenchan](#)
2:29am 18 February 2018 [Permalink](#)

Question 3: Could be user testing done online?

Answer: Of course. I actually asked the course teacher to do this on my behalf and I created a questionnaire link for the students to evaluate whether or not the flashcards work for them and help them improve learning. The questionnaire link is here: https://goo.gl/forms/FuO1n2NzaYpAneJ43 Unfortunately, I did not obtain any responses thus far. This might be that the students are very busy and this project is not part of the course. However, as you can see from the questionnaire, my questions also cover the students' perception and acceptance of AR technology. All these could be extended for future research on the same project.

Question 4: How did I find Weebly as a hosting service than Wordpress?

Answer: Frankly, I personally used Weebly before when I was a teaching assistant at Boston University. We assigned students to create a dedicated website for their practicum class. And I am quite accustomed to Weebly features. As for Wordpress, while many users find it easy to use, I personally view it as a great tool for blogging than informative websites. And in Weebly you have several ready-to-use templates to choose from and it is just like 'drag-and'drop' feature which helped me save lots of time.

Question 5: Any way to enhance collaborative work?

Answer: Definitely. Once you create a ZapWorks account, you can actually share the account with someone else and that one can have access to the same content on which you are working. This simply provides a hint for collaborative work. The teacher can ask pairs of groups of students to create a shared account where they help each other creating something. And there is also a paid Educator Subscription where you as a teacher can create Student Accounts. Once Student Accounts created, the teacher can keep track of every task the students do. So I think ZapWorks has this colloborative idea in its work. It is just how we tweak the features to fit our needs.

[Katherine Hinchey](#)
10:52pm 18 February 2018 [Permalink](#)

Hi, I just finished watching the video of your presentation again, and I wanted to thank you again for giving us such detailed information about the steps you took, lessons learned, and so on. I'm taking careful notes! I can definitely envision me trying AR in my context

within the very near future, and I'm learning from your experiences. I thought you should know that your sharing is having a positive effect, and I'm finding it to be immensely helpful on a very practical level.

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