SFU Flexible Learning with Augmented Reality

DemoFest 2018

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In this presentation, I will explore:

1) vision-based AR experiences that bring learners, art, story and educational technology together

2) how to leverage AR to move beyond the traditional barriers of university classroom walls and screens

3) opportunities and challenges of #ARVRinEDU (follow this hashtag)

4) ongoing work and future directions
AR refers to an enhanced version of reality made available by the integration of digital information (sound, video, animation, graphics, text, GPS data, etc.) with the user’s real environment in real time.

Unlike VR, which replaces the user’s surroundings with an entirely simulated environment, AR supplements the real world environment by overlaying new information.

AR applications can be fun (Snapchat AR Bitmoji, Pokemon Go) or as complicated as instructions on how to perform a life-threatening surgical procedure. AR offers a flexible and experiential way of teaching/learning 21st century skills like creativity, collaboration, communication, and critical thinking.
Defining + Analyzing Keywords

Think critically and creatively about what keyword you would like to define and contribute to the Canvas "keywords" page. Most entries should include a definition, explanation, historical development, and examples. In the opening paragraph, the first few sentences should clearly define the topic and explain its significance in relation to Educational Technology and Learning Design.

Keep the entry as jargon-free as possible and view your entry from a perspective of preparing a speech rather than writing an essay. In this way, we can describe complex issues in thoughtful ways without being needlessly complicated. If you must quote, please limit to one sentence and acknowledge the source (use APA formatting for citations).

Focus on the meaning of the keyword and avoid digressions; every word is important. Please ensure that your entry meets but does not exceed the 500 word limit. Word counts include the keyword, cross-references, and a few further readings or links.
I developed an open-ended and easily adaptable assignment: students create unique AR codes that overlay digital information on top of real world images and the course keywords, thereby augmenting their learning with personalized experiences that interact with place and space in both physical and virtual environments.
Defining + Analyzing Keywords with AR

In class, we will explore Zapworks Designer, a user-friendly tool to create and code vision-based AR. We will use Zapworks to define, analyze, and visualize the course keywords; you can design scenes with video, weblinks, photos, buttons, games, quizzes, etc.

Think critically and creatively about which course keyword you will contribute. Most terms should include a succinct definition, etymology, historical development, examples, pros/cons for learning, etc. Try to keep your work as jargon-free as possible.

Know that you are encouraged to use your imagination and intelligence as you make your thinking visual. This assignment gives you an opportunity to learn new technical skills, push beyond your comfort zones, and contribute new ways of experiencing and understanding the keywords in our course.

Please upload the high resolution tracking image (with zapcode) to Canvas so that we can be inspired by and learn from each other’s work. You will have time in the lab to work and collaborate on the coding for this assignment.
GAME-BASED LEARNING
IMMERSIVE EDUCATION

DEMOfest 2018
Digital Literacy
Design Thinking
Intelligent Tutoring Systems
<title> Creative Coding </title>
TAKE A TRIP DOWN MEMORY LANE

A historic journey of edtech

Education Technology is the development and application of tools (including software, hardware and processes) intended to promote, improve and manage learning.
DEMOfest 2018

FAKE NEWS
Massive Open Online Courses
mLearning
Your Path to a World of Endless Knowledge
Building upon the growing body of scholarly work examining the role and significance of AR technologies for education, our research addresses three questions:

>> How does the process of creating personalized AR projects serve to enrich a course curriculum (e.g., what does student generated content contribute to the course goals)?

>> What are the affordances and constraints of using AR as a tool for improving teaching and learning effectiveness?

>> What are best practices for creating AR projects with students to build classroom community and nurture a collaborative learning environment?

IN WHAT WAYS DOES INTEGRATING AR WITH A COURSE CURRICULUM TRANSFORM THE STUDENT LEARNING EXPERIENCE?

RESEARCH PURPOSE + QUESTIONS
Our preliminary findings evidence that the student learning process was empowering, inspirational, unexpectedly fun, useful for making meaningful connections with peers, and valuable for generating a collaborative spirit and a sense of belonging in the course.

Important team building and mentorship opportunities resulted as learners supported each other to solve technical challenges.

While the AR tools contributed to the instructor’s innovative pedagogy and ability to empower student learning, some students struggled with the technical aspects.

There are many innovative technological and pedagogical options to engage our students and build community, however, there are also considerable challenges with integrating technology in meaningful, diverse, and inclusive ways (within the context of a university classroom setting).
As Metro Vancouver is one of the fastest growing AR/VR hubs in the world (with a global market expected to reach the value of US $209.2 billion by 2022), we have an important responsibility to be inclusive in designing our future realities and virtual worlds (Statistica, 2018).

Foundational to this research is the perspective that learners of all ages benefit from opportunities to be the coders, creators, and inventors of the media and technologies that make our world—thereby taking an active role in understanding who controls, owns, and shapes our technological futures.

Rather than being users or consumers of digital content, students are challenged to design AR with a focus on storytelling using their images, music, videos, and words.

AR offers unique curricular experiences that integrate powerful content creation tools for learners with diverse technical skills (ranging from beginner to advanced levels).

Using an open-ended and easily-adaptable design process, students are involved in co-creating curriculum and knowledge.

Classmates have new ways to share their innovative coursework with each other to help create a more connected and vibrant campus.
As we live in an increasingly visual and digital society, integrating AR technologies with curriculum opens up a world of creative possibilities for teaching/learning.
Long-term goals include building on the findings of this project to develop a new AR/VR project that focuses on environmental literacy and related community action. Student teams will be challenged to design immersive digital experiences related to sustainable living and climate transformation (concepts that are difficult to teach in traditional classroom environments).

WE ARE BUILDING AN OVERSIZED INTERACTIVE AR ABACUS!
LEARN MORE, VISIT EXHIBIT #13
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