Instituto Superior de Paços de Brandão

VIRTUAL AND AUGMENTED REALITY: THE FUTURE OF MICROLEARNING AND E-LEARNING

Training session – Iraq, 14-17 April, 2019

Pedro Valente, PhD

pedro.valente@ispab.pt

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ARE YOU READY?

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THE COMMON REALITY...

What we have now:

- Sessions at classroom/office
- Along side many other people
- Attend a certain place for a certain time
- Session last for a specified time length
- Fixed Schedule

- One-Size-Fits-All approach = easy to organize

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ONE-SIZE- DOES NOT -FITS-ALL APPROACH

Effective learning can't be a one-size-fits-all approach.

Personalisation is becoming a key feature of the most effective technology, tailoring the experience to our preferences to make life easier.

We now take it for granted that Netflix offers us content suggestions based on what we've watched before.

Yet when it comes to learning, it's still not commonplace to see technology being used to offer a personalised experience.

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Did you know...

Tick, Tock!

Adults spend 18 hours a week online[1]

1.9 billion

Each day, 1.9 billion people are online, searching for what they need[2]

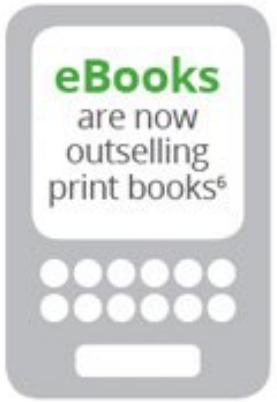
30

Users are exposed to an average of 30 Google Display Network ads daily[3]

77% of smartphone users call or visit a business after looking for local info on their phones[7]

71% of smartphone users search because they saw an ad[5]

33% of smartphone users use their phone while watching TV[5]



Online video ads received 18.3% more viewer attention than TV commercials[8]

81%

of global online users are reached by the Google Display Network[3]

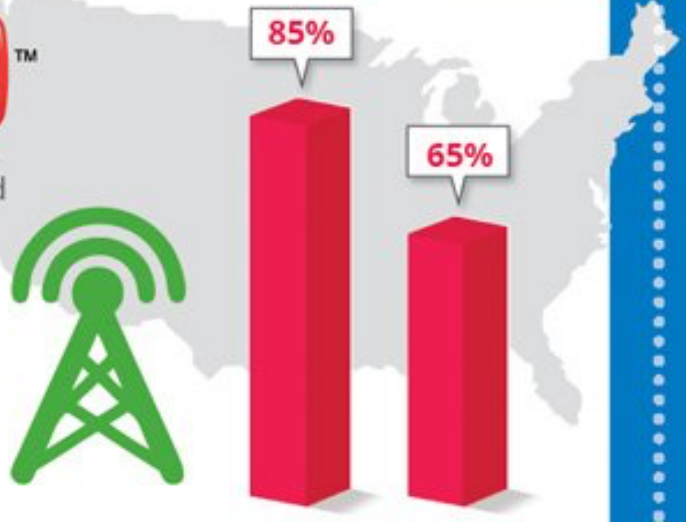
53%

of smartphone users on average made a purchase as a result of a mobile search[7]

1 in 10

We're approaching a point wh 1 in every 10 dollars is spent online in the U.S.[9]

In 2010, total U.S. online ad revenue overtook newspaper print ad revenue for the



YouTube™

More video is uploaded to YouTube every

60 days

than the top three broadcasters have produced in

60 years[3]

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SMART PHONE = SMART CONTENT

Fun Facts:

- ✓Mobiles are now considered at extension of ourselves.
- ✓"Nomophobia" - separation anxiety that we feel when we're apart from our smartphones
- ✓In 2018, 52.2% of all website traffic worldwide was generated through mobiles!
- ✓Millennials and Gen Z are the first generations to have been raised on technology.
- ✓Putting the learner experience at the heart of everything we create

More and more learners are demanding eLearning units that can be completed on their mobiles.

Learners want LMS that function just as well on smartphones as they do on PCs and laptops.

Making LMS responsive isn't enough. It may suit tablet use, but mobile phones will require a specialized app that is designed solely to make eLearning more accessible.

That's not to say that learners *only* want to learn on mobiles or tablets. The desktop PC and laptop still have their place in eLearning.

The option is there for learners to take their learning via any means they see fit – and this is something they really value.

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MEET THE MODERN LEARNER

As training moves to more digital formats, it's colliding with new realities in learners' jobs, behaviors, habits, and preferences.

Today's employees are overwhelmed, distracted, and impatient. Flexibility in where where and how they learn is increasingly important. They want to learn from their peers and managers as much as from experts. And they're taking more control over their ***own*** development.

OVERWHELMED...

Number of times online every day
early days of the Internet **5** | today **27**

41 % of time workers spend on things that offer little personal satisfaction and do not help them get work done.

DISTRACTED...

Knowledge workers are constantly distracted with millions of websites, apps, and video clips.

Most learners won't watch videos longer than **4** minutes

People unlock their smartphones up to **9** times every hour

2/3 of knowledge workers actually complain that they don't have time to do their jobs

IMPATIENT...

Online, designers now have between **5** and **10** seconds to grab someone's attention before they click away

5 Workers now get interrupted as frequently as every minutes— ironically, often by work applications and collaboration tools

1%
of a typical workweek
is all that employees have to focus on training and development

UNTETHERED

Today's employees find themselves working from several locations and structuring their work in nontraditional ways to accommodate their lifestyles. Companies are finding it difficult to reach these people consistently and even harder to develop them efficiently.

37% of the global workforce is expected to be "mobile" by the end of 2015

30% of full-time employees do most of their work somewhere other than the employer's location

20% of workforce comprised of temps, contractors, and freelancers

ON-DEMAND

Employees are accessing information—and learning—differently than they did just a few years ago. Most are looking for answers outside of traditional training and development channels. For example:

To learn what they need for their jobs, employees access: search engines 70%+, online courses 50-60%

People are increasingly turning to their smartphones to find just-in-time answers to unexpected problems

COLLABORATIVE

Learners are also developing and accessing personal and professional networks to obtain information about their industries and professions.

~80% of workforce learning happens via on-the-job interactions with peers, teammates, and managers

Learners are:
- asking other people
- sharing what they know

at Google, **55%** of training courses are delivered by an ecosystem of **2,000+** peer learners

EMPOWERED

Rapid change in business and organizations means everyone needs to constantly be learning. More and more people are looking for options on their own because they aren't getting what they need from their employers.

2½ to 5 Half-life (in years) of many professional skills

38% of workers who say they have opportunities for learning and growth at their workplace

62% of IT professiona... report having paid fo... out of their own p...

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WHAT IS MICROLEARNING? AND WHAT IS GOOD FOR?

Microlearning is all about small bits of learning

A quick bite here, a short bit there, and suddenly you've delivered a whole lesson without overwhelming your learner with excess information.

It's easy to see why microlearning has become one of the most talked-about strategies for Learning & Development.

- ✓ Small pieces of information
- ✓ 5 minutes or less videos
  - ✓ Infographics
  - ✓ Newsletters
- ✓ Learners choose when, where, and how to view the material
- ✓ Data drives and supports implementation - The information is shared in multiple locations

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MICROLEARNING TOOLS ARE THE FUTURE OF LEARNING

ACCESSIBILITY: You can't have flexibility without accessibility

ENGAGEMENT: It's not easy to make engaging content

CONTINUOUS IMPROVEMENT: With more time on their hands, trainers can continuously improve the training materials. Better Feedback to learners.

Microlearning online platform examples

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EXAMPLES OF MICROLEARNING TOOLS

TO DRIVE YOUR
LEARNER'S ENGAGEMENT

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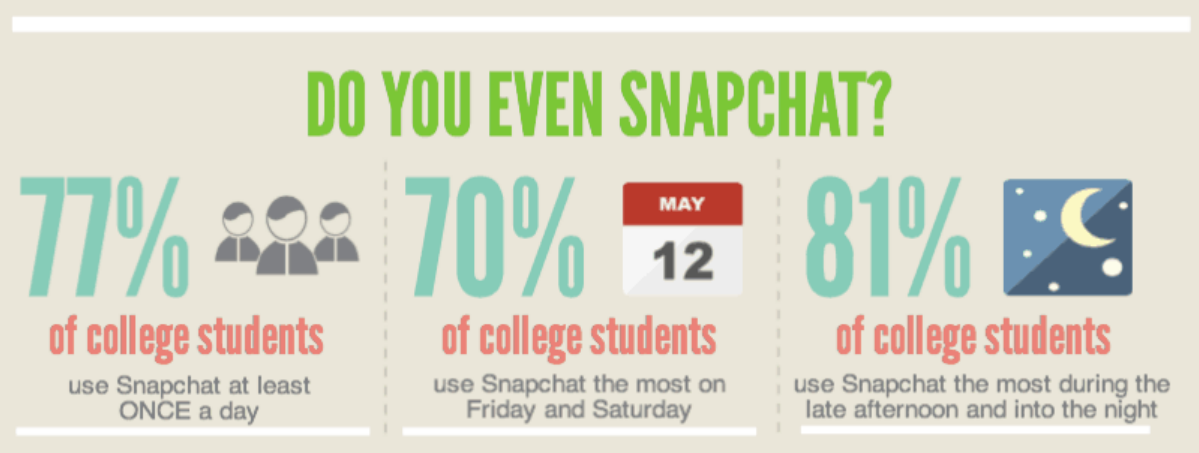
#1: SNAPCHAT



with over 60 Million daily users, the app holds exciting prospects for learning strategies.

The brevity of the medium, 15-second videos and photos, lends itself quite well to microlearning.

A 2015 study found learner retain 22% more information when it's received in short bursts, so try breaking up your lessons into ultra-short clips and delivering them through the app.

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#2 - YOUTUBE

Video eLearning is nothing new but approaching it with a microlearning mindset can turn your longwinded training video into easily digestible segments.

Many legacy LMS's might not support video uploads (server-side max size restriction), so think about breaking up that training video into 3-minute chunks and uploading them YouTube so they're more accessible to your learners.

Uploading them to a video service also ensures your content is easily watchable with a smartphone or tablet.

Fun facts:

- ✓ The very first video on YouTube was launched at 8:27 PM on Saturday, April 23rd, 2005
- ✓ The average number of mobile YouTube video views per day is 1,000,000,000.
- ✓ There are over 7,000 hours of full-length movies and shows on YouTube.
- ✓ More than 1.9 billion unique users visit YouTube each month.

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#3 - INFOGRAPHICS

Infographics, although not techy, are exceptional at delivering knowledge in small bites.

Our brains are hardwired to understand and retain what we see; we can get a sense of a visual scene in less than 0.01 seconds.

Delivering visually appealing content ensures your learners are more likely actually read it.

So instead of keeping your lessons in a plain-text document, try laying it out in an infographic.

Resources Available:

- Biteable (from Free)
- MURAL (Trial)
- BeFunky (from Free)
- Visme (from Free)
- Cacoo (Trial)
- Snappa (from Free)
- Google Charts (Free)
- Canva (from Free)

[Link+]

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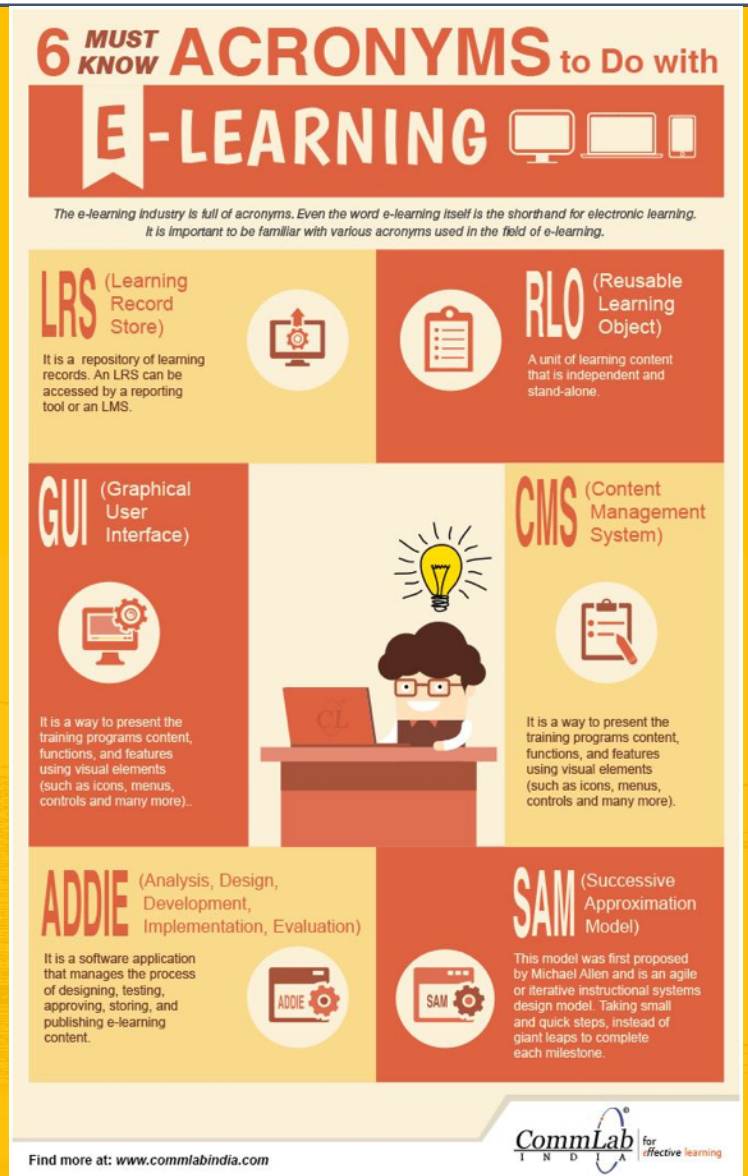
#3 - INFOGRAPHICS - EXAMPLES

From LMS Lecturers/trainers



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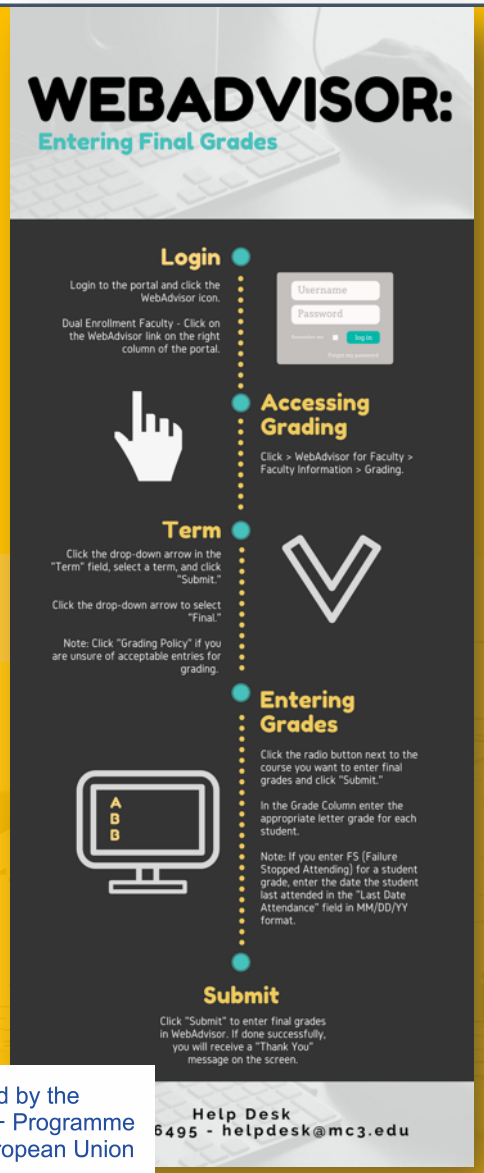
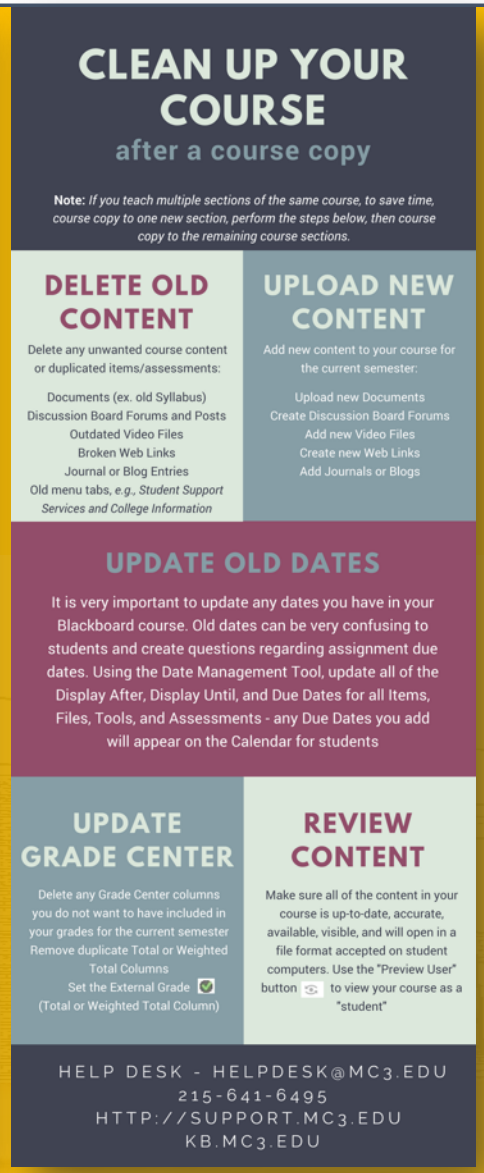
#3 - INFOGRAPHICS - EXAMPLES (1)

From LMS Administrators





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MONTGOMERY COUNTY COMMUNITY COLLEGE

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#4 - FACEBOOK

Buzzfeed's hugely popular "Tasty" videos are probably the best showcase of microlearning on Facebook.

The 1 minute-ish cooking videos have garnered over 80 Billion views.

That taps into the essence microlearning; content that's fast, easily digestible, and fun to watch.

Copying the concept above with your team members can be an effective and fun way to distribute your learning through Facebook.

[Facebook Link]

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#5 - PODCAST

With more than 29 Billion minutes of podcasts being produced each year, finding one which fits your training needs is easier than ever.

Take the time explore podcasts that are relevant to your subject and repurpose them in your training.

Grab sound-bites that are relevant to your training topic and make them available to your learners.

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IS POSSIBLE TO INNOVATE IN THIS AREA?

And yes, exist space to innovate in microlearning, allowing learners to consume training at their own pace, in a ubiquitous way.

Microlearning (and the tools mentioned above) are a great way to supplement your learning strategy.

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A UBIQUITOUS WAY…

In the past year, the majority of conventional learning schemes have been transformed offline, gradually adapting E-Learning and M-Learning through the evolution of IT technology.

Existing static schemes of learning must be transformed in all domains, to deliver true personalized learning depending on various user characteristics.

Ubiquitous learning exists in the physical space of everyday life. It is possible to compose learning components existing in the activity space of an intelligent network.

Adaptive learning in such ubiquitous environments is a significant learning step.

Ubiquitous learning and human-computer interaction (HCI) areas are tide up

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VIRTUAL REALITY (VR)

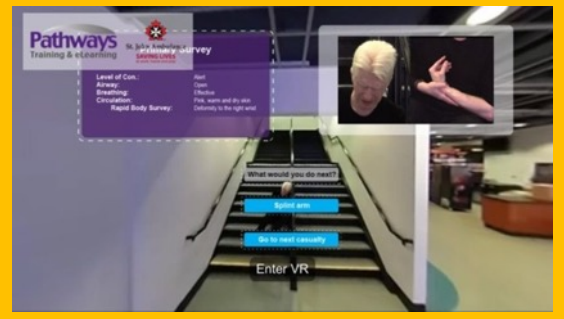
Virtual Reality (VR) is the use of computer technology to create a simulated environment.

Virtual Reality's most immediately-recognizable component is the head-mounted display (HMD).

Human beings are visual creatures, and display technology is often the single biggest difference between immersive Virtual Reality systems and traditional user interfaces.

Major players in Virtual Reality include HTC Vive, Oculus Rift and PlayStation VR (PSVR)

By simulating as many senses as possible, such as vision, hearing, touch, even smell, the computer is transformed into a gatekeeper to this artificial world.



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USING VIRTUAL REALITY IN THE CLASSROOM

Just a few years ago, virtual reality was a sci-fi concept for most of us.

If a decade ago we were still using the home phone in order to communicate, nowadays we can instantly send messages through the use of smart devices.

The virtual reality market is one of the fastest growing markets (they estimated growing 5.2 billion dollars, in 2018).

we can definitely state, that virtual reality could be useful to our day-by-day activities.

Being a universal technology, it can be applied to almost any type of domain of activity. Education included!

The world 1st VR headset – Ivan Sutherland, 1968

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ADVANTAGES OF USING VR IN THE CLASSROOM

- Provides Outstanding Visualizations That Aren’t Possible In The Traditional Classroom.
- Creates Interest.
- Increases Students' Engagement.
- Doesn’t Feel Like Work.
- Improves The Quality Of Education In Different Fields
- Eliminates The Language Barrier

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DISADVANTAGES OF USING VR IN THE CLASSROOM

- Deteriorates Human Connections.
- Lack Of Flexibility
- Functionality Issues
- Addiction To The Virtual World
- Quite Expensive.

- ✓ the virtual reality environment is consistently evolving.
- ✓ It could bring dozens of benefits to almost any field, but it can also prove to be harmful..

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AUGMENTED REALITY (AR)

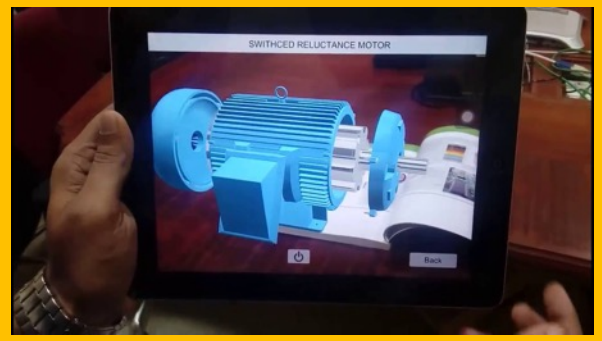
Virtual Reality and Augmented Reality are two sides of the same coin.

AR simulates artificial objects in the real environment; Virtual Reality creates an artificial environment to inhabit.

In AR, the computer uses sensors and algorithms to determine the position and orientation of a camera.

AR technology then renders the 3D graphics as they would appear from the viewpoint of the camera, superimposing the computer-generated images over a user's view of the real world. mine the position and orientation of a camera.

In VR, the computer uses similar sensors and math. AR technology then renders the 3D graphics as they would appear from the viewpoint of the camera, superimposing the computer-generated images over a user's view of the real world.



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AR EXAMPLES - MICROSOFT HOLOLENS

[Youtube vídeo]

[Youtube vídeo]

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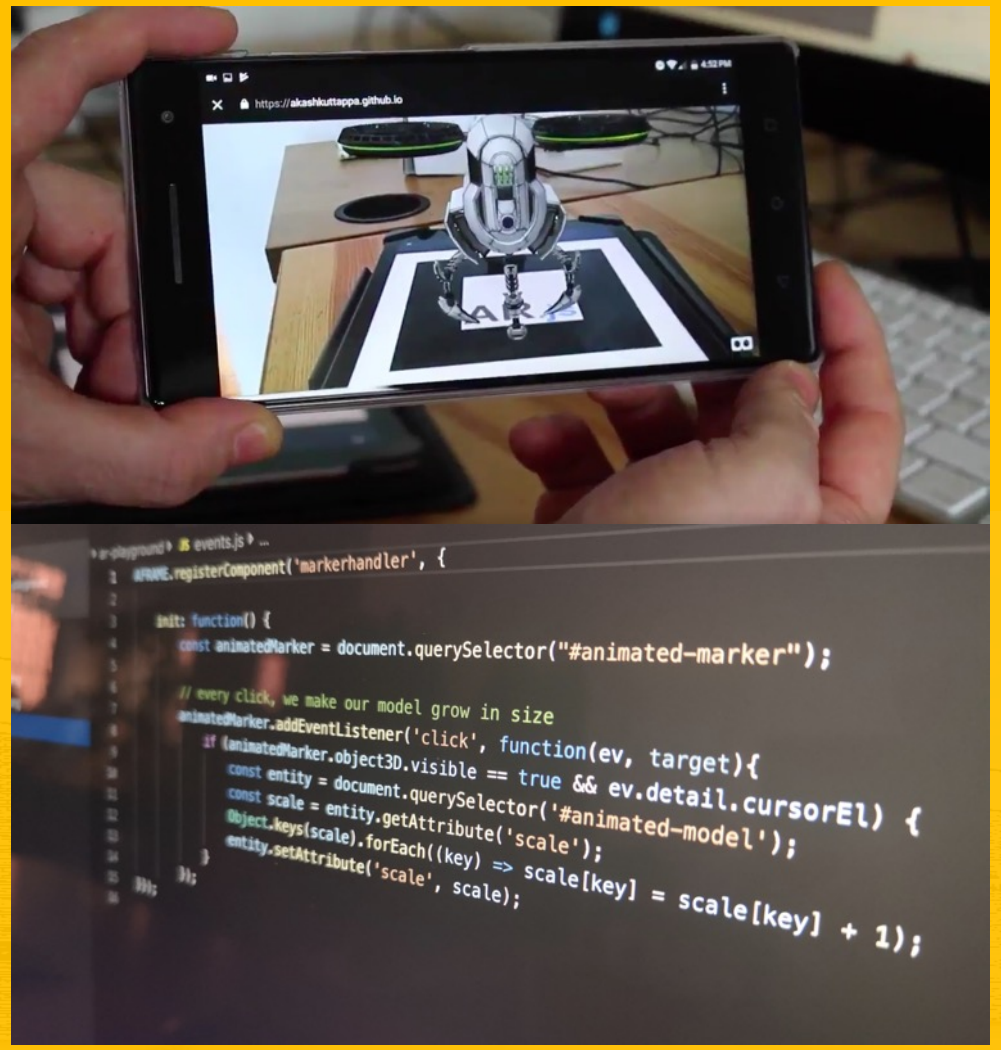
AR EXAMPLE - AR FOR WEB: DEMO



[AR.js tutorial]

Augmented reality in tem lines of code [explained]

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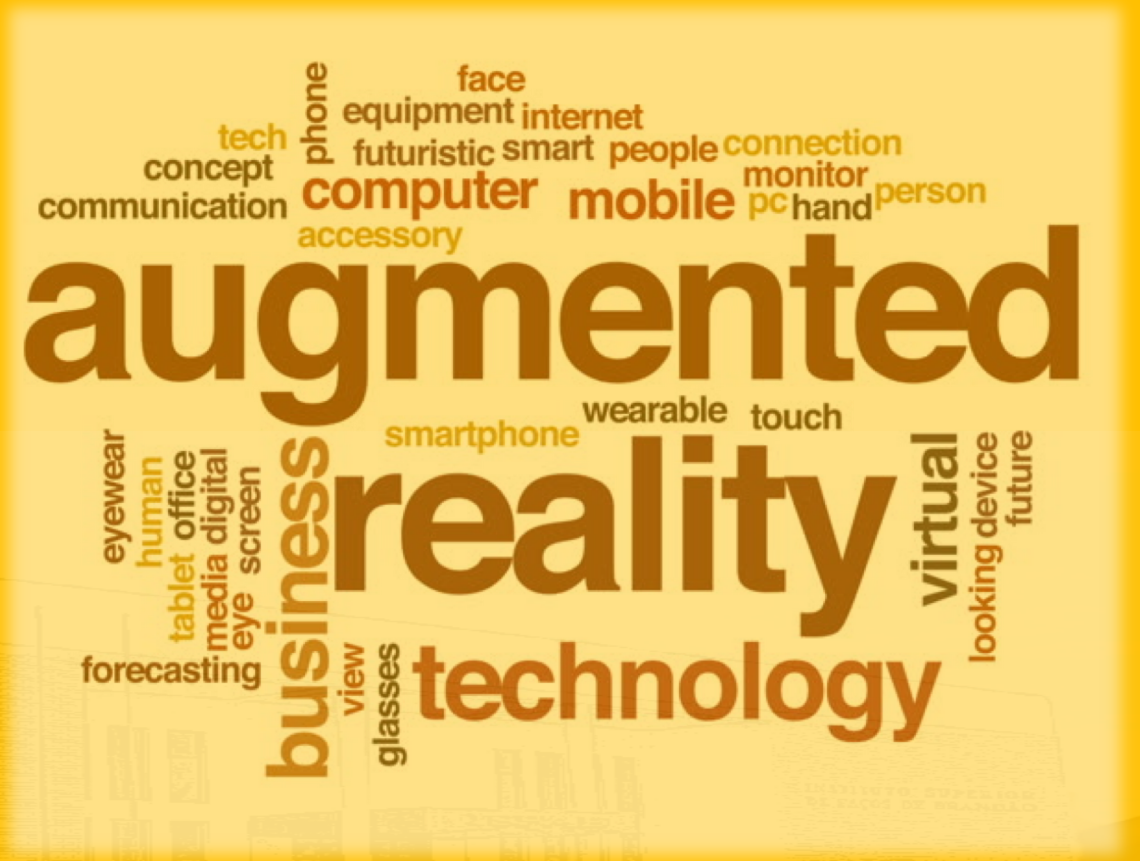
TO SUM UP...



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ACTIVE LEARNING REFLECTIVE ASSIGNMENT EXAMPLE

[Optional Weekly assignment] Learning How to Learn: Weekly Student ePortfolio

Learning from your Research (and Mistakes). It is a challenge and also an opportunity to excel at course technical and personal skills. It is not part of Participation evaluation.

In a weekly based (till every sunday), each student reply in his wiki page, to the following questions:

1. **What was the development activity?** (summary of the topic covered in that week, in students words)
2. **What have I learned/practise?**
3. **How will I apply this learning? (could be code example, online training enrol)**
4. **supported Bibliography (e.g. webpage, forum discussion)**

It gives the opportunity to both the student and the teacher to fill doubts and individualized learning pathways to topics related.

Highlights for individual Learning diaries (ePortfolio):

- #1 - 17/02 - revisões HTML5/CSS3
- #2 - 24/02 - revisões JavaScript/DOM
- #3 - 03/03 - Js - funções anónimas e execução automática
- #4 - 10/03 - Interrupções Carnaval
- #5 - 17/03 - Modelo web clássico vs. modelo AJAX
- #6 - 24/03 - A importância das políticas de Segurança na Web
- #7 - 31/03 - Web API's e Widgets
- #8 - 07/04 - Consolidação AJAX e API's
- #9 - 28/04 - Introdução ao NODE.js
- #10 - 05/05 -
- #11 - 19/05 -

Web Systems – undergraduated informatics course, provided in Moodle

- A technique to have continous student/teacher feedback
- A way to assess classes quality

It fits to me...you need to evaluate the impact of it, in your classes, course goals.

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THANKS FOR YOUR ATTENTION

ANY QUESTION, FEEDBACK, COMMENT?

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