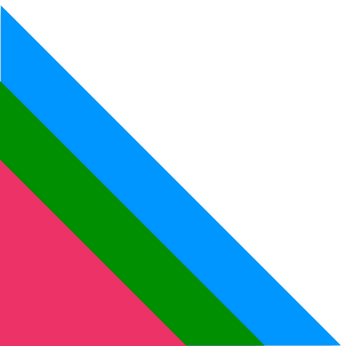


# Smart Teaching – Better Learning!

## How Games and MOOCs Add Value to the Learning Experience

Prof. DI. Dr. Maja Pivec

Berlin, 2015



*researchanddesign.fh-joanneum.at*

## **Interaction and Knowledge**

Game-based Learning | Applied Game Design | Mobile  
Game Design | Game Design for Teaching | E-learning &  
Mobile Learning | Gamification in the Workplace |  
Learning in Virtual Worlds | Change Learning |

“A future where knowing is an obsolete idea.  
Once we get past knowing we move into  
an era of learning.”

Sugata Mitra TED Prize talk 2013

“Localisation.

The next frontier in games for learning”

Schaffer, ECGBL 2015 Key Note

# AVATAR

Un mondo virtuale per l'apprendimento.

<http://www.avatar-learning.com>

# Possibilities in Virtual Worlds

- Learn by communication
- Learn by exploration
- Interact with environment
- Visit sites, take guided tours
- Role plays
- Meet and collaborate with peers from other countries
- Build and create



# Piloting activities 2015

- 7 different sectors
  - 17 classes
  - 22 different subjects
  - 26 teachers
  - 291 students
- 
- 644 experimentation hours



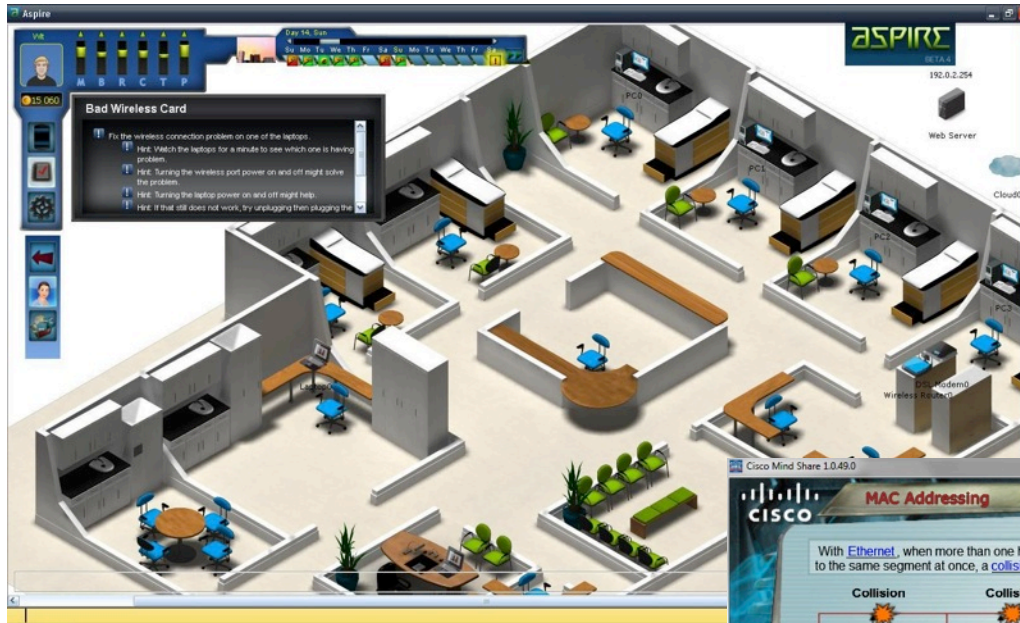
# Piloting activities 2015

- 66% students prefer virtual activities
- 40% teachers would use them

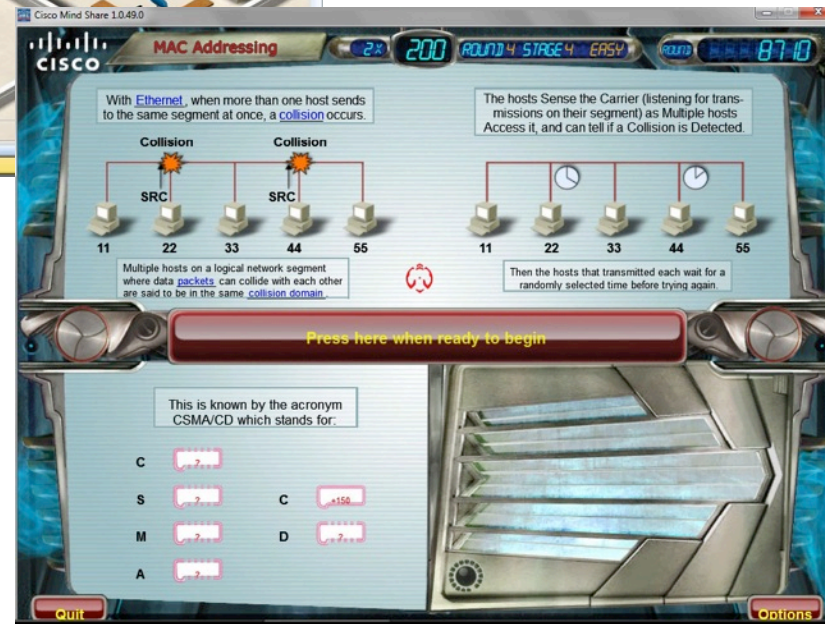
# Designing for Learning

- Factual (declarative) Knowledge
- Cognitive Skills and Conceptual Knowledge
- Problem Based Learning and Decision Making
- Skills and Soft-Skills Training
- Recruitment and Awareness

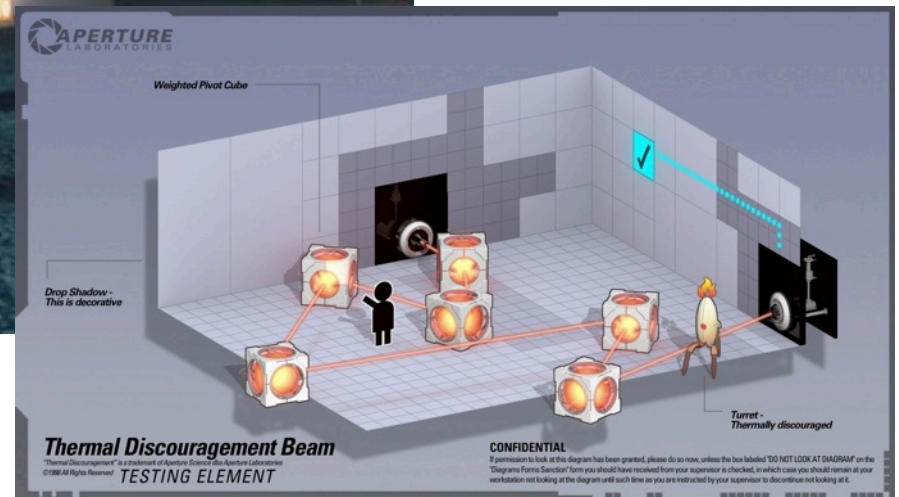
- Factual (declarative) Knowledge



“Aspire” and  
“Mindshare” from Cisco



- Cognitive Skills and Conceptual Knowledge



“Portal 2”  
WibiData modification

- Problem Based Learning and Decision Making



“Innov8” and “CityOne”  
from IBM



- Skills and Soft-Skills Training



Fronius Virtual Welding



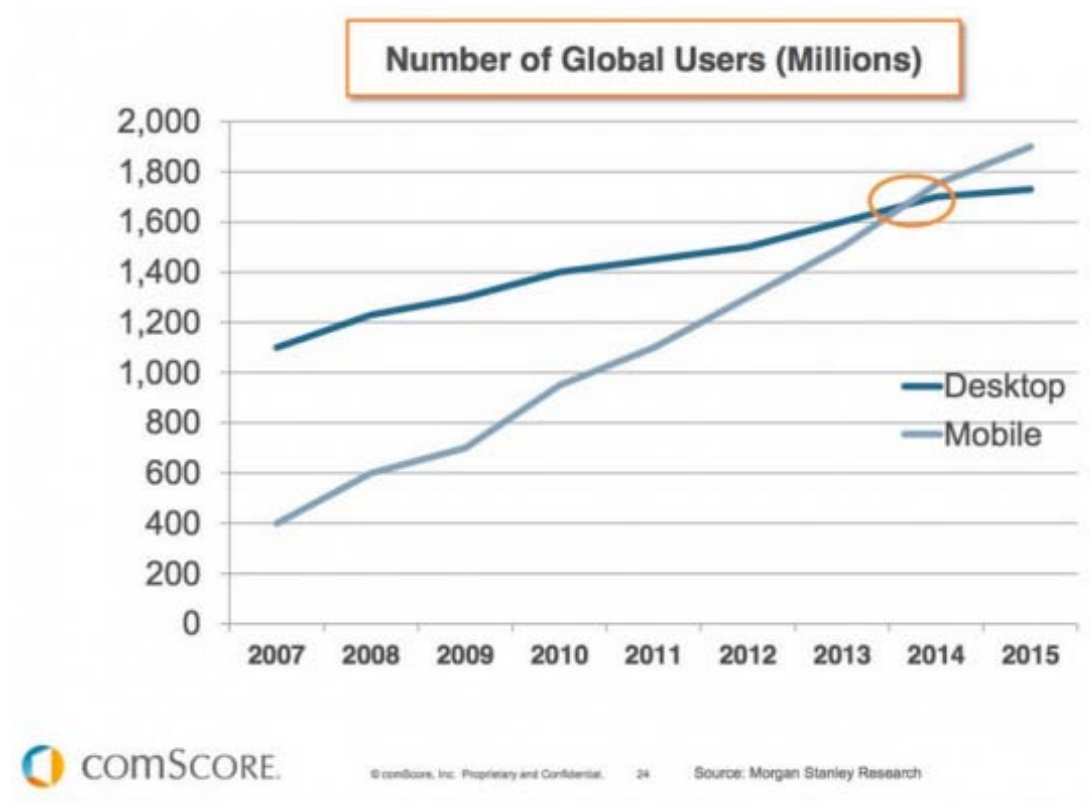
“Star Bank” from BNP Paribas

# Designing for Learning

Future proofing your investment

- Design for touch
- Include a social interface
- Available in multiple platforms simultaneously
- Use push notifications and analytic monitoring

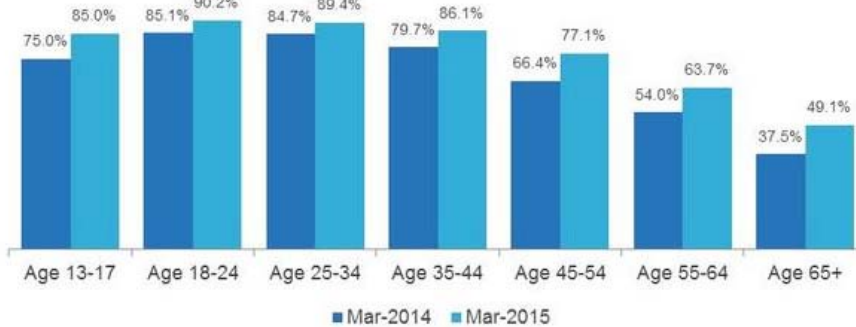
# Designing for Learning



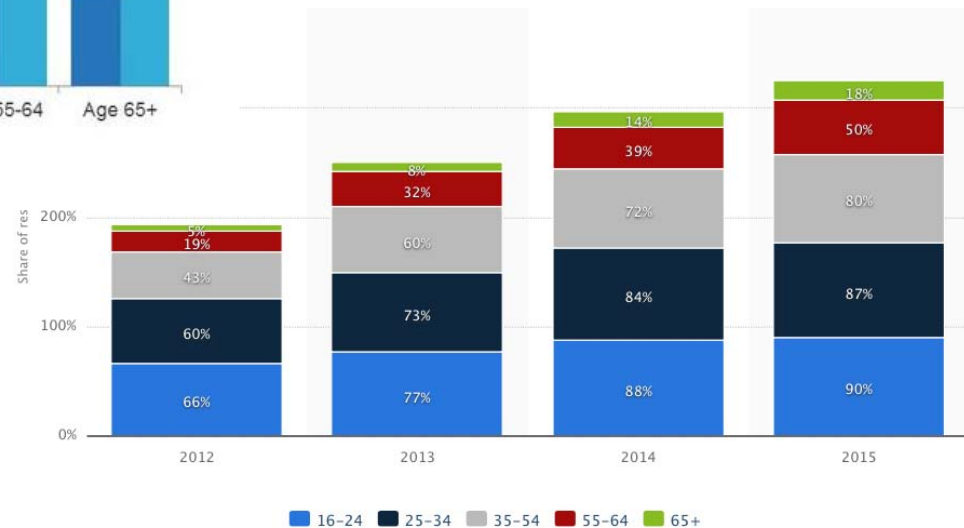


# Designing for Learning

U.S. Smartphone Penetration by Age: Y/Y Change  
Source: comScore MobiLens, U.S., March 2014 - March 2015

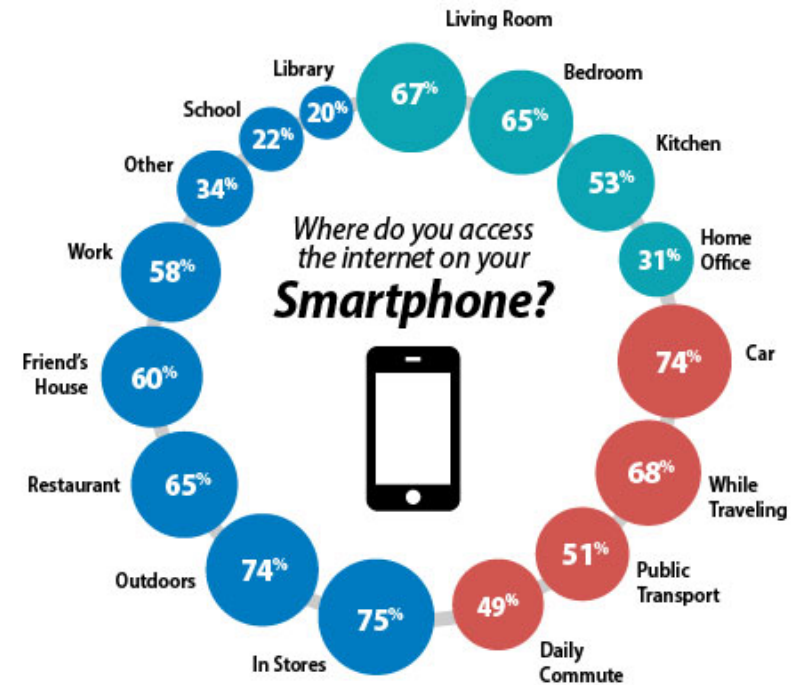
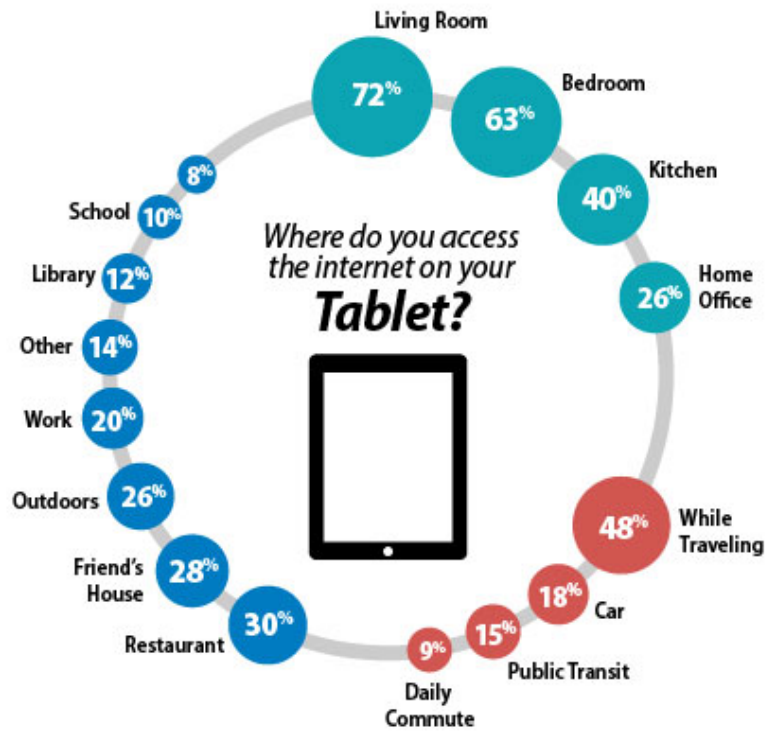


United States  
versus  
United Kingdom



© Statista 2015

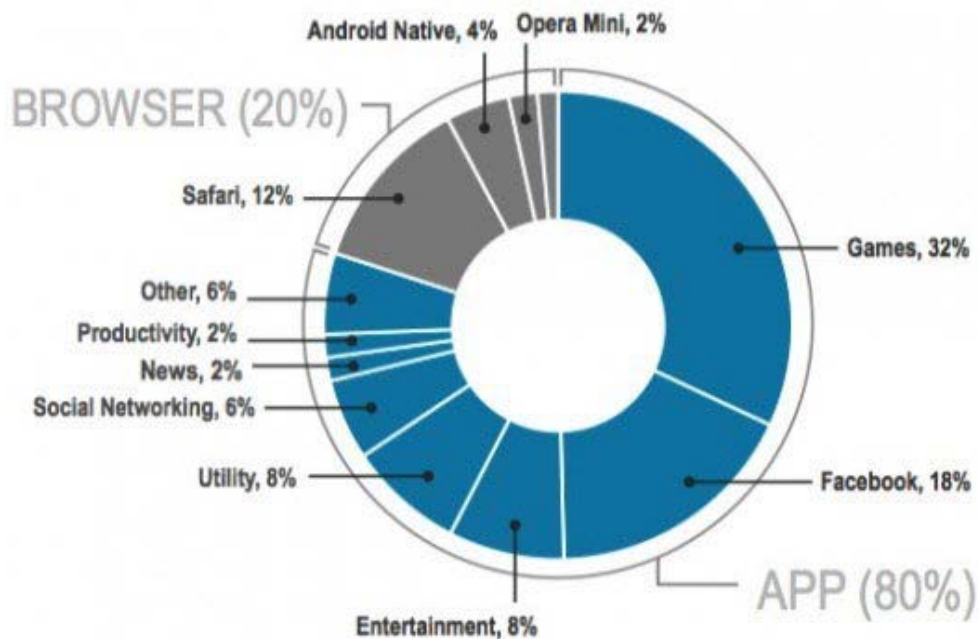
# Designing for Learning



Source: Forrester Research  
2013

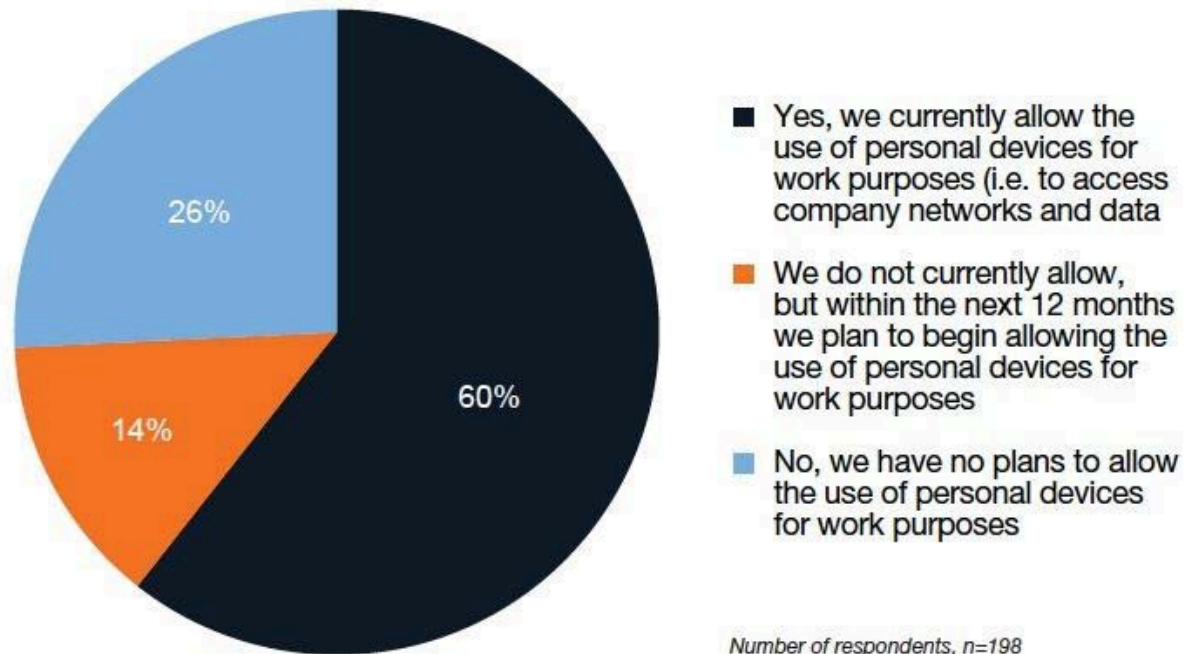
# Designing for Learning

Time Spent on iOS & Android Connected Devices



# Designing for Learning

## DOES YOUR ORGANIZATION CURRENTLY ALLOW BYOD?



Tech Pro Research, 2013

- Skills and Soft-Skills Training



“The Great Green Hipster Hotel”

<http://greengamesproject.com/>

# BUILD A SUCCESSFUL HOTEL ("THE GREAT GREEN HIPSTER HOTEL") BY ADDING ROOMS, RESTUARANTS, ETC.



# HIRE STAFF TO CATER FOR GUESTS AND TO RUN YOUR BUSINESS SUCCESSFULLY!

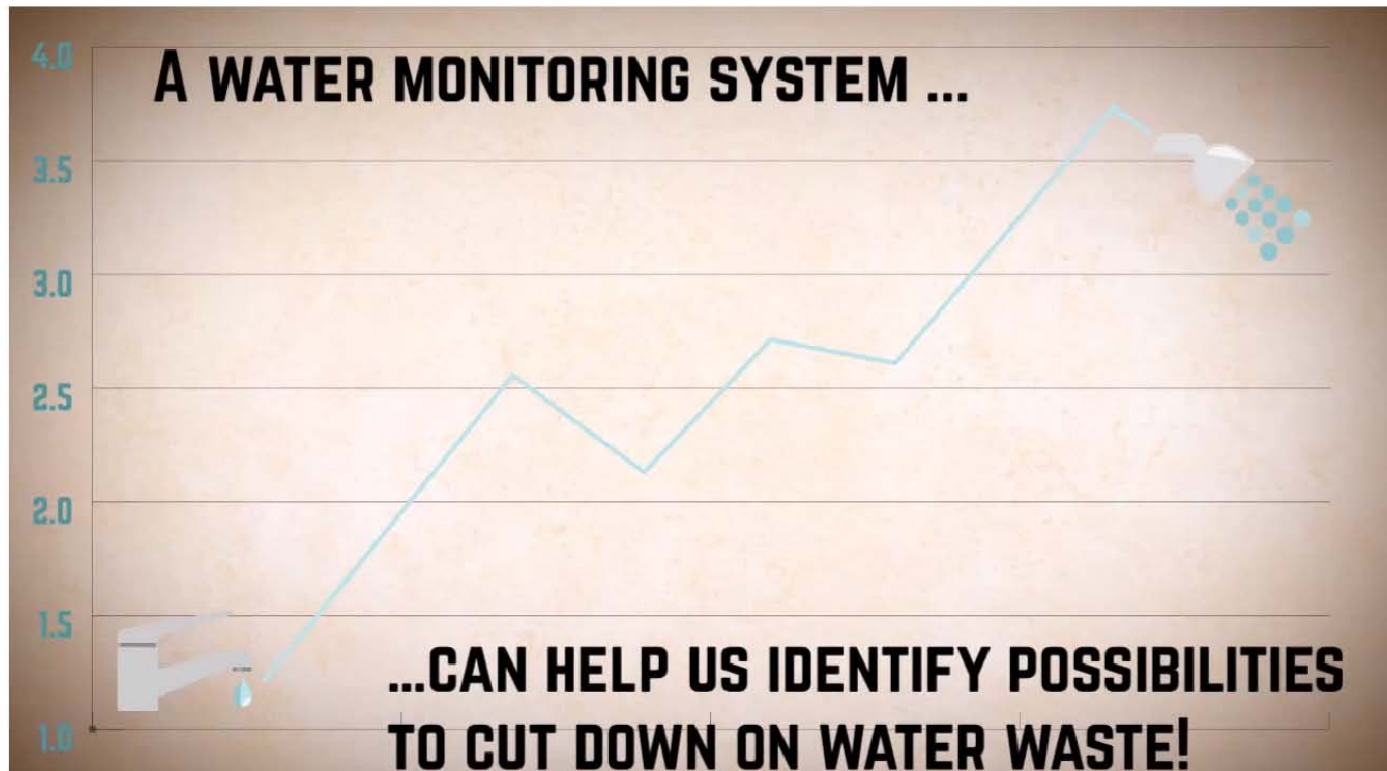


# LEARN ABOUT SUSTAINABILITY IN HOTEL MANAGEMENT BY UPGRADING EQUIPMENT IN ROOMS AND BY TRAINING STAFF IN SUSTAINABILITY!





# ACCESS ANIMATIONS AS PART OF THE GAME, TO IMPROVE YOUR KNOWLEDGE OF HOTEL SUSTAINABILITY!



<https://www.youtube.com/watch?v=vc5uV7H9x7s>

# Piloting 2015

- 300 responses from 5 countries  
Austria, Germany, Ireland, UK, Spain
- 92,6% game has the potential to teach about environmental issues in a hotel
- 77,7 % would like to use this game to develop own skills and knowledge in this area

# Piloting 2015

- Many mobile devices from students are too old
- Teachers need help with usage of the game
- Schools do not have mobile devices
- Social problems with BYOD

# E-Learning meets GBL

- Project Management for Entrepreneurs

PM competences: resilience and stress management skills, time management.



“Dina Dash”



“Tiny Towers”

- Project Management for Entrepreneurs

*“The major difference between my **game #1** and **game #2** was this: At first, **I treated my enterprise like a dinner party with friends: I hired three, four people - obviously a friendly atmosphere where no one must be strangers, right? ...I hired researchers before I had enough workers to even realize innovation.***

*At my second go, I followed the game's advised steps and **suddenly things fell into place: there is a chronology to management.** Certain infrastructure and investments are the start of every business - be it one of three people, or three hundred.”*



Special Issue #43 (2015)

Applied Games & Gamification –  
Drivers for Change

<http://www.openeducationeuropa.eu/>

# Examples of Excellence



“Virtual Chinese”  
from Alelo

Language and  
Cultural Learning

# Examples of Excellence

- Multiple forms of Input
- Audio and Text Feedback
- Multiple Platforms
- Builtin Computerised Assessment

“Virtual Chinese”  
from Alelo

Language and  
Cultural Learning





# Examples of Excellence



“Tyco Island”  
from CranberryBlue R&D  
Compliance & Ethics Training

# Examples of Excellence



“Nasa’s Moonbase Alpha”  
from Virtual Heroes

Awareness and  
Recruitment



“My work is a Game, a very *Serious Game*”

M.C.Escher

# Learning Experience MOOC COPE14, COPE15

# Structure and Participants

- Week 1 - “Communication Across Borders”
- Week 2 – “Legal Cultures”
- Week 3 – “Doing Business in Emergent Markets”
- Week 4 – “Relationships & Networks in Business to Business Marketing
- Week 5 – “International Communication and Negotiation”
- Week 6 – “Transfer into Individual Contexts”

# Structure and Participants

- 537 participants in total from 34 countries
- 2611 comments published on the COPE14 web site
- 83 badges were achieved
  
- 460 Participants in total from 32 countries
- 4100 comments published on the COPE15 web site
- 125 badges were achieved

# Evaluation Methods

- 2 Questionnaires
  - After one week – short questionnaire
    - Focused on learners expectations
  - At the end of the MOOC
    - Details about motivation
    - Activities in and around the MOOC
    - Problems related to participation
- Reflections on learning (Week 6)

# COPE15 - Organisation of learning

Did you find a way to organise your learning in COPE15?

Answer Options	Response Percent	Response Count
yes, I was well organized	16,7%	18
it was ok, I was a little bit confused at the beginning but finally I could manage it	76,9%	83
I could not manage well	5,6%	6
it was not ok	0,9%	1
	<b><i>answered question</i></b>	<b>108</b>
	<b><i>skipped question</i></b>	<b>5</b>



# COPE15 - Learning Objectives

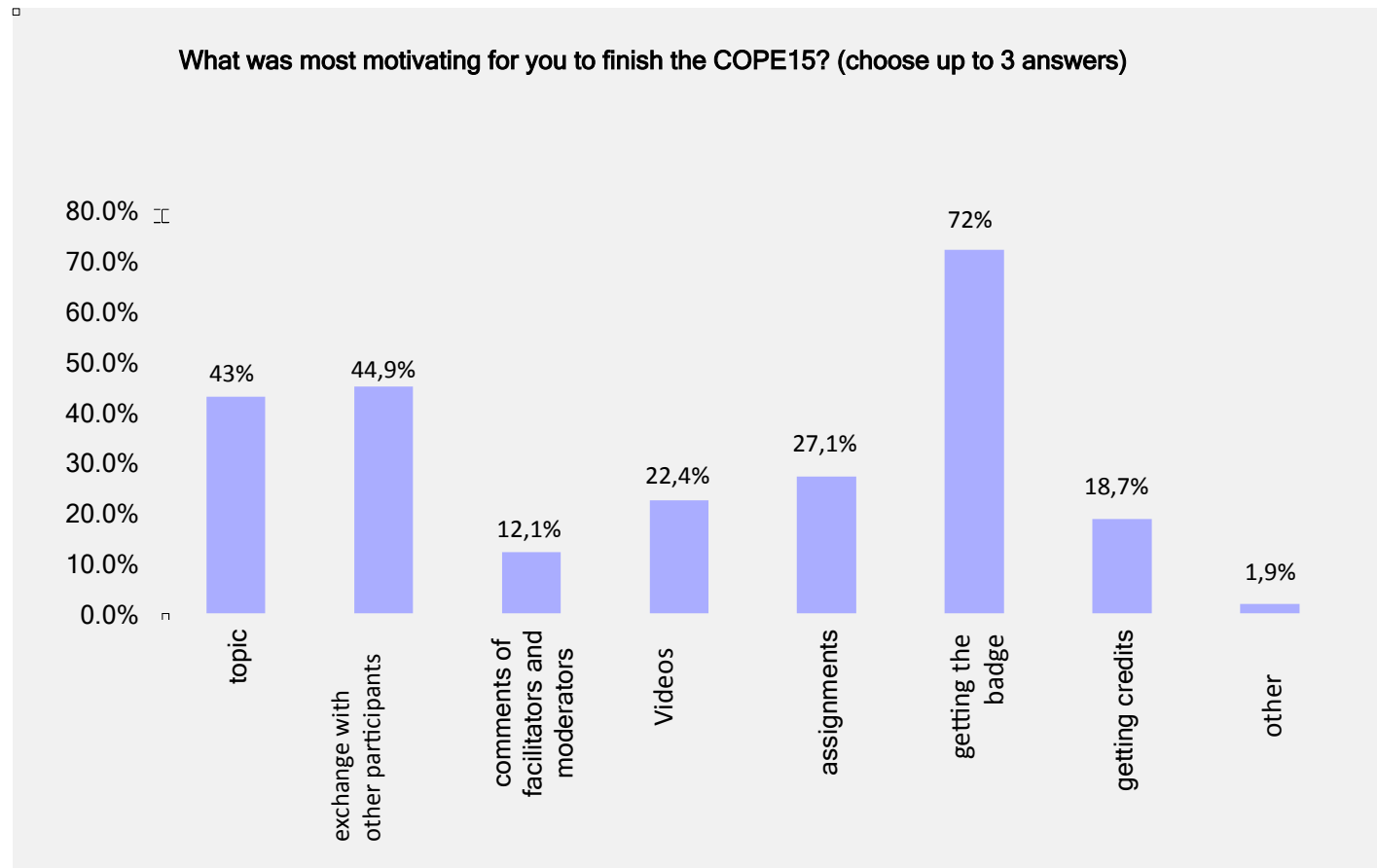
Were the learning objectives and goals of the each week clear to you?

Answer Options	Response Percent	Response Count
yes, objectives were clearly specified	38,0%	41
it was clear to me to some extent	54,6%	59
I could not get a complete picture	7,4%	8
not at all	0,0%	0
	<b><i>answered question</i></b>	<b>108</b>
	<b><i>skipped question</i></b>	<b>5</b>

# COPE 14 - Numbers on Learning

- 91,5 % learned something new
- 90,9 % learned new facts and concepts
- 84,7 % got new insights and perspectives
- 68,8 % learned something unexpected
  
- 77,8% found video most informative
- 72,6% found comments of other participants most interesting

# Motivation for finishing COPE15



# Reflections on Learning

- Learning in the MOOC was adaptable to their individual needs
- Possible to allocate the time for learning according to their schedule
- Participation influenced their online habits and online media usage  
(time they spend online, media they use and how they use them)

# Reflections on Learning

*„... Now I feel more confident posting my thoughts and experiences through the web....“ (-Thomas)*

„...I tried to keep my comments short and reduced to the most important information, so that they stay interesting. ...“ (-Anna)

# Reflections on Learning

- Participation on-line was perceived as time consuming
- Wealth of information was bordering on overload
- Difficult to see benefits of learning in MOOC
- Some would prefer smaller and closer group
- E-Learning course as alternative solution
- Would prefer f2f and traditional ways of learning

# In conclusion, MOOCs are

- Good opportunity for learning
- Exploring learning preferences
- Experiencing new ways of on-line communication and collaboration
  
- Require time for learning
- Require pro-active learners
- Voluntary participation

# Competences of MOOC Learners

- Curiosity & open mindedness
- Explorative and experimental spirit
- Self discipline & being able to allocate enough time for participation
- Some amount of digital literacy
- Wanting to communicate internationally and to exchange opinion



# Thank You & Discussion

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