



**WP3. Capacity Building for LLL Centre &  
Teaching Staff  
Mod. 5**

**Flexible Learning Environments**



SPANISH NATIONAL UNIVERSITY OF DISTANCE EDUCATION.

June the 4th, 5th, 6th

Mostaganem, Algeria

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## 1.-Introduction

The present sessions are designed integrating methodological strategies. Online learning and key emerging technologies are designed in this module in order to present options which could be applied in different contexts in higher education with pedagogical methods (Problem Based Learning and Collaborative Learning) there are some important documents related to innovation and technology:

1. Johnson, L., Adams Becker, S., Estrada, V., Freeman, A. (2014). NMC Horizon Report: 2014 Higher Education Edition. Austin, Texas: The New Media Consortium. Retrieved from: <http://www.nmc.org/pdf/2014-nmc-horizon-report-he-EN.pdf>
2. Harris, Judith B.; Grandgenett, Neal; and Hofer, Mark, "Testing a TPACK-Based Technology Integration Assessment Rubric" (2010). *Teacher Education Faculty Proceedings & Presentations*. Paper 18. <http://digitalcommons.unomaha.edu/cgi/viewcontent.cgi?article=1014&context=tedfacproc>
3. Sáez López, J.M., Dominguez garrido, M.C, Mendoza, V. (2014). Valoración de los obstáculos, ventajas y prácticas de e-learning: Un estudio de caso en universidades iberoamericanas. *Educatio Siglo XXI*, 32 (2), 195-220. Recuperado de <http://dx.doi.org/10.6018/j/202221>
4. Robles-Gómez, A., Ros, S., Hernández, R., Tobarra L., Caminero, A. C., & Agudo, J. M. (2015). User Acceptance of a Proposed Self-Evaluation and Continuous Assessment System. *Educational Technology & Society*, 18 (2), 97–109. Retrieved from: [http://www.ifets.info/journals/18\\_2/8.pdf](http://www.ifets.info/journals/18_2/8.pdf)

From 10:00h to 13:00h there are face to face sessions in which participants discuss about the contents addressed that day. There are also methodological strategies in these face to face sessions:

- Thursday the 4<sup>th</sup> : Problem Based Learning (5h)
- Friday the 5<sup>th</sup>: Collaborative Learning (5h)
- Saturday the 6<sup>th</sup>: Activity Design/Simulation (5h)

From 15:00h to 14:30h:

- Thursday the 4<sup>th</sup> : Good practices in the respective universities
- Friday the 5<sup>th</sup>: Virtual Learning Environments. (aLF platform)

## 2.-Objectives

- To analyze possibilities related to online learning and integration in Higher Education
- To understand educational technology and innovation in pedagogical contexts
- To analyze methodological strategies and possibilities of active learning
- To evaluate the importance of learning modalities and their advantages and disadvantages.
- To integrate pedagogies and key emerging technologies to different contexts.
- To analyze the Technology Acceptance Model (TAM)

## 3.-Contents

The present course describes contents related to Online Learning, Educational Technologies, trends and Innovation in Higher Education. The main contents are the following:

### 1.-Implication in Online Learning

- Flexibility of online learning.
- Learners sometimes feel isolated
- Technical aptitudes
- Social interaction: since you usually have reduced face-to-face time
- Student's autonomy
- Attention and dedication of the teaching tools
- Effective communication
- Continuous contact with the student

### 2. - Key emerging Technologies.

- Flipped Classroom
- Games and Gamification
- Integration of Online, Hybrid, and Collaborative Learning
- Learning Analytics

## 2014 NMC Master List of Tracked Technologies

### Consumer Technologies

- > 3D Video
- > Electronic Publishing
- > Mobile Apps
- > Quantified Self
- > Tablet Computing
- > Telepresence
- > Wearable Technology

### Digital Strategies

- > BYOD
- > Flipped Classroom
- > Games and Gamification
- > Location Intelligence
- > Makerspaces
- > Preservation/Conservation Technologies

### Internet Technologies

- > Cloud Computing
- > The Internet of Things
- > Real-Time Translation
- > Semantic Applications
- > Single Sign-On
- > Syndication Tools

### Learning Technologies

- > Badges/Microcredit
- > Learning Analytics
- > Massive Open Online Courses
- > Mobile Learning
- > Online Learning
- > Open Content
- > Open Licensing
- > Personal Learning Environments
- > Virtual and Remote Laboratories

## Key Emerging Technologies

### Social Media Technologies

- > Collaborative Environments
- > Collective Intelligence
- > Crowdfunding
- > Crowdsourcing
- > Digital Identity
- > Social Networks
- > Tacit Intelligence

### Visualization Technologies

- > 3D Printing/Rapid Prototyping
- > Augmented Reality
- > Information Visualization
- > Visual Data Analysis
- > Volumetric and Holographic Displays

### Enabling Technologies

- > Affective Computing
- > Cellular Networks
- > Electro vibration
- > Flexible Displays
- > Geolocation
- > Location-Based Services
- > Machine Learning
- > Mobile Broadband
- > Natural User Interfaces
- > Near Field Communication
- > Next-Generation Batteries
- > Open Hardware
- > Speech-to-Speech Translation
- > Statistical Machine Translation
- > Virtual Assistants
- > Wireless Power

Figure 1: Key emerging Technologies (Johnson, Adams Becker, Estrada, Freeman, 2014). The aforementioned contents are framed and categorized in NMC Horizon report 2014 (detailed in figure 1). Most contents are related to digital strategies and learning

## Online Learning Benefits

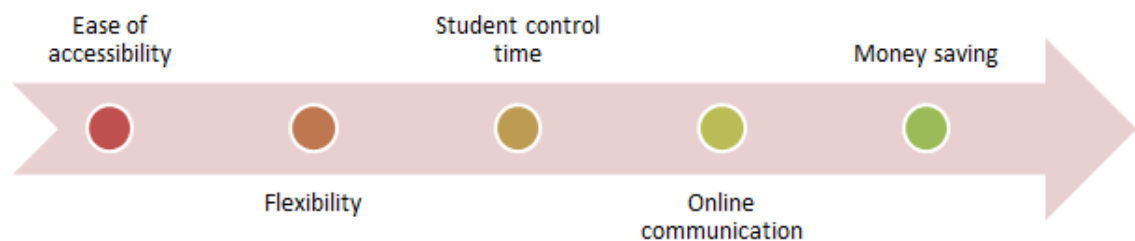


Figure 2: Online learning benefits.

## 4.-Methods

The course is organized through active methodologies. Coherently with Face to face teaching is organized with active methodological strategies: Problem Based Learning (PBL) and Collaborative Learning. Groups are very important in face to face sessions.

### 4.1.-Organization in Project Based Learning: Subject: online learning

Is it a real problem?

Solution is:

- 1.-Easy
- 2.-Medium
- 3.-Hard

What do we need to solve the problem?

How to solve the problem?

Comparing with Blended Learning and Face to face

Prepare all data and summarize

Present to the classroom

#### Cases/ 6 problems in 6 groups:

- Group 1: flexibility of online learning combined with everyday life commitments causes many students to fall victim to procrastination
- Group2: Online learners sometimes feel isolated
- Group 3: Many students enter online classes without a basic technical aptitude
- Group 4: Less social interaction: since you usually have reduced face-to-face time
- Group 5: although many people enjoy the flexibility of online coursework, other students struggle in less-structured environments
- Group 6: e-learning requires student's autonomy

### 4.2.-Organization. Collaborative Learning

- Group 1 and 2: Learning Analytics (p.38) and Gamification (p.46)
  - Group 3 and 4: Flipped Learning (p. 36) and collaborative learning (p.10)
  - Group 5 and 6: Online, Hybrid, Blended Learning (p.10)
- 
- ✓ Are we implementing these now?
  - ✓ What do we need to implement this (better)?
  - ✓ What are the advantages?
  - ✓ How do we overcome the obstacles?
  - ✓ Prepare all data and summarize
  - ✓ Present to the classroom
  - ✓ 10 minutes presentation and 10 minutes questions / discussion.

## 5.-Course structure: Online Learning and key emerging technologies

	Thursday the 4th	Friday the 5th	Saturday the 6th
10:00h-11:30h	<b>Lecturing:</b> <ul style="list-style-type: none"> <li>✓ TPACK Model. (2)</li> <li>✓ Hybrid Learning (1)</li> <li>✓ Online Learning (3)</li> <li>✓ TAM (4)</li> </ul> <b>Methodological strategy:</b> <ul style="list-style-type: none"> <li>✓ Problem Based Learning</li> </ul>	<b>Lecturing:</b> <ul style="list-style-type: none"> <li>✓ Online Learning (3)</li> <li>✓ Solving obstacles</li> <li>✓ Key emerging Tech</li> </ul> <b>Methodological strategy:</b> <ul style="list-style-type: none"> <li>✓ Collaborative Learning</li> </ul>	<b>Activity Design/Simulation</b> In pairs, each participant institution presents in 15 minutes a designed activity.  The other participants assess this activity (Peer assessment).
11:30h-12:00h	<b>Break</b>		
12:00h-13:30h	<b>Online Learning</b> Group 1: flexibility of online learning combined with everyday life commitments causes many students to fall victim to procrastination Group2: Online learners sometimes feel isolated Group 3: Many students enter online classes without a basic technical aptitude Group 4: Less social interaction: since you usually have reduced face-to-face time Group 5: although many people enjoy the flexibility of online coursework, other students struggle in less-structured environments Group 6: e-learning requires student's autonomy <b>Presentations/ Discussion</b>	Group 1 and 2: Learning Analytics (p.38) and Gamification (p.46)  Group 3 and 4: Flipped Learning (p. 36) and collaborative learning (p.10)  Group 5 and 6: Online, Hybrid, Blended Learning (p.10)  <b>Presentations/ Discussion</b>  <b>Preparation for Activity Design/Simulation</b>	<b>Activity Design/Simulation (continue)</b> In pairs, each participant institution presents in 15 minutes a designed activity.  The other participants assess this activity (Peer assessment).
15:00h-16:30h	<b>Good Practices</b> presented by participants. Examples from Universities. 15 minutes each participant	<b>Virtual Learning Environment</b> <b>aLF Platform</b> <b>Online resources</b>	

### Resources

(1) Johnson, L., Adams Becker, S., Estrada, V., Freeman, A. (2014). NMC Horizon Report: 2014 Higher Education Edition. Austin, Texas: The New Media Consortium. Retrieved from: <http://www.nmc.org/pdf/2014-nmc-horizon-report-he-EN.pdf>

(2) Harris, Judith B.; Grandgenett, Neal; and Hofer, Mark, "Testing a TPACK-Based Technology Integration Assessment Rubric" (2010). *Teacher Education Faculty Proceedings & Presentations*. Paper 18. <http://digitalcommons.unomaha.edu/cgi/viewcontent.cgi?article=1014&context=tedfacproc>

(3) Sáez López, J.M., Dominguez garrido, M.C, Mendoza, V. (2014). Valoración de los obstáculos, ventajas y prácticas de e-learning: Un estudio de caso en universidades iberoamericanas. *Educatio Siglo XXI*, 32 (2), 195-220. Recuperado de <http://dx.doi.org/10.6018/j/202221>

(4) Robles-Gómez, A., Ros, S., Hernández, R., Tobarra L., Caminero, A. C., & Agudo, J. M. (2015). User Acceptance of a Proposed Self-Evaluation and Continuous Assessment System. *Educational Technology & Society*, 18 (2), 97–109. Retrieved from: [http://www.ifets.info/journals/18\\_2/8.pdf](http://www.ifets.info/journals/18_2/8.pdf)

## 6.-Thursday the 4<sup>th</sup> (10:00h-13:30h): Problem Based Learning (5h)

### Lecturing:

- ✓ TPACK Model. (2)
- ✓ Hybrid Learning (1)
- ✓ Online Learning (3)
- ✓ TAM (4)

### Methodological strategy:

- ✓ Problem Based Learning

-At 10:00h Lecture: TPACK model and Integration of Hybrid and online Learning

-Description of methodological strategy (Problem Based Learning)

-Groups assignment

-Application of Problem based Learning cases/problems in 6 groups.

-Subject: Online Learning

### Group 1: flexibility of online learning combined with everyday life commitments causes many students to fall victim to procrastination.

Is it a real problem?

Solution is:

- 1.-Easy
- 2.-Medium
- 3.-Hard

What do we need to solve the problem?

How to solve the problem?

Comparing with Blended Learning and Face to face

Prepare all data and summarize

Present to the classroom

### Group2: Online learners sometimes feel isolated

Is it a real problem?

Solution is:

- 1.-Easy
- 2.-Medium
- 3.-Hard

What do we need to solve the problem?

How to solve the problem?

Comparing with Blended Learning and Face to face

Prepare all data and summarize

Present to the classroom



### **Group 3: Many students enter online classes without a basic technical aptitude**

Is it a real problem?

Solution is:

- 1.-Easy
- 2.-Medium
- 3.-Hard

What do we need to solve the problem?

How to solve the problem?

Comparing with Blended Learning and Face to face

Prepare all data and summarize

Present to the classroom

### **Group 4: Less social interaction: since you usually have reduced face-to-face time**

Is it a real problem?

Solution is:

- 1.-Easy
- 2.-Medium
- 3.-Hard

What do we need to solve the problem?

How to solve the problem?

Comparing with Blended Learning and Face to face

Prepare all data and summarize

Present to the classroom

### **Group 5: although many people enjoy the flexibility of online coursework, other students struggle in less-structured environments**

Is it a real problem?

Solution is:

- 1.-Easy
- 2.-Medium
- 3.-Hard

What do we need to solve the problem?

How to solve the problem?

Comparing with Blended Learning and Face to face

Prepare all data and summarize

Present to the classroom

### **Group 6: e-learning requires student's autonomy**

Is it a real problem?

Solution is:

- 1.-Easy
- 2.-Medium
- 3.-Hard

What do we need to solve the problem?

How to solve the problem?

Comparing with Blended Learning and Face to face

Prepare all data and summarize

Present to the classroom

## 7.-Thursday the 4<sup>th</sup> (15:00h-16:30h): Good practices (1:30h)

From 15:00h to 16:30 h, participants present **Good Practices** and examples from their universities or Institutions. Each participant institution spends 15 minutes explaining activities and pedagogical design from their Universities.

Therefore, there are 6 participant institutions, which will share their experiences, each participant 15 (15min \*6 = 1 hour and half). The session intends to be interesting and inspiring for all participants.

## 8.-Friday the 5<sup>th</sup>: Collaborative Learning (5h)

Lecturing:

- ✓ Online Learning (3)
- ✓ Solving obstacles

Methodological strategy:

- ✓ Collaborative Learning

- Group 1 and 2: Learning Analytics (p.38) and Gamification (p.46)
  - ✓ Are we implementing these now?
  - ✓ What do we need to implement this (better)?
  - ✓ What are the advantages?
  - ✓ How do we overcome the obstacles?
  - ✓ Prepare all data and summarize
  - ✓ Present to the classroom
  - ✓ 10 minutes presentation and 10 minutes questions / discussion.
- Group 3 and 4: Flipped Learning (p. 36) and collaborative learning (p.10)
  - ✓ Are we implementing these now?
  - ✓ What do we need to implement this (better)?
  - ✓ What are the advantages?
  - ✓ How do we overcome the obstacles?
  - ✓ Prepare all data and summarize
  - ✓ Present to the classroom
  - ✓ 10 minutes presentation and 10 minutes questions / discussion.
- Group 5 and 6: Online, Hybrid, Blended Learning (p.10)
  - ✓ Are we implementing these now?
  - ✓ What do we need to implement this (better)?
  - ✓ What are the advantages?
  - ✓ How do we overcome the obstacles?
  - ✓ Prepare all data and summarize
  - ✓ Present to the classroom
  - ✓ 10 minutes presentation and 10 minutes questions / discussion.

## 9.-Friday the 5<sup>th</sup> (15:00h-16:30h): Virtual Learning Environment (aLF)

In this session we will show online material resources. Virtual Learning Environments and Learning Management Systems are essential to provide online learning or Blended Learning. aLF Platform in UNED is an example that integrates a platform with Task, assessment, groups management, students organization, Webconference, forums and other tools.

## 10. - Saturday the 6<sup>th</sup>: Activity Design/Simulation

Each participant institution presents in 15 minutes a designed activity (two professors from that institution prepare and present the designed activity)

The other participants assess this activity (Peer assessment) according to appendix 1.

## 11.-Resources and videos

1.-Flipped Classroom: <https://www.youtube.com/watch?v=TPcblbgCtUA>

Flipped Classroom Horizon Report 2014

### Flipped Classroom


Time-to-Adoption Horizon: One Year or Less

The first well documented example of the flipped classroom was in 2007 when Jonathan Bergmann and Aaron Sams, chemistry teachers at Woodland Park High School in Colorado.

They experimented with using screen capture software and PowerPoint to record live lessons and post them on YouTube. They immediately observed a dramatic change in the classroom.

Salman Khan founded the not-for-profit Khan Academy with the mission of providing a free world-class education to anyone, anywhere

Images source (wikimedia commons)



2.-Learning Analytics: <https://www.youtube.com/watch?v=v8JEWfCrpKw>

Learning Analytics Horizon report 2014

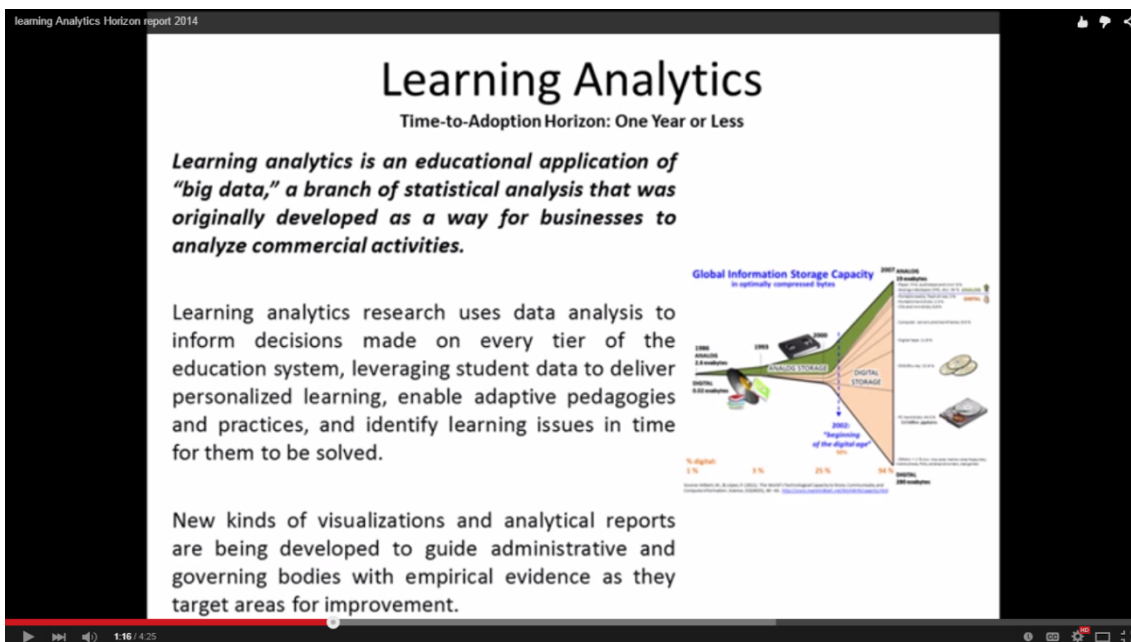
### Learning Analytics

Time-to-Adoption Horizon: One Year or Less

*Learning analytics is an educational application of "big data," a branch of statistical analysis that was originally developed as a way for businesses to analyze commercial activities.*

Learning analytics research uses data analysis to inform decisions made on every tier of the education system, leveraging student data to deliver personalized learning, enable adaptive pedagogies and practices, and identify learning issues in time for them to be solved.

New kinds of visualizations and analytical reports are being developed to guide administrative and governing bodies with empirical evidence as they target areas for improvement.



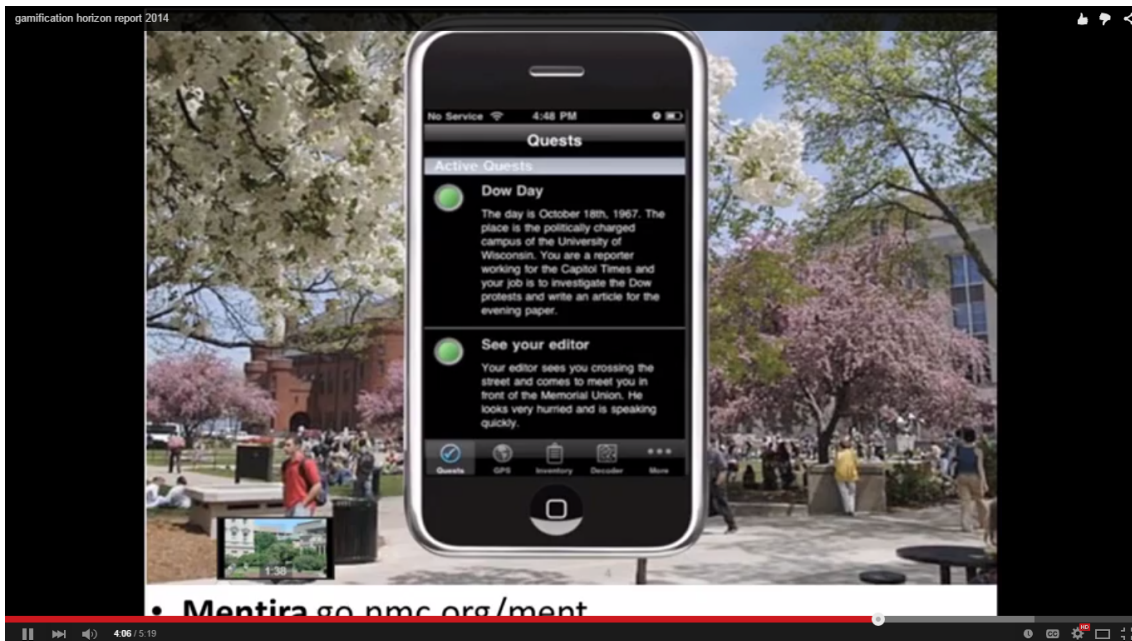
**Global Information Storage Capacity**  
in optimally compressed bytes

Year	Storage Capacity (bytes)	% digital
1986	1.8 exabytes	1%
1998	1.8 exabytes	5%
2000	1.8 exabytes	25%
2007	1.8 exabytes	94%

2007 analysis: 10 exabytes

2000: "beginning of the digital age"

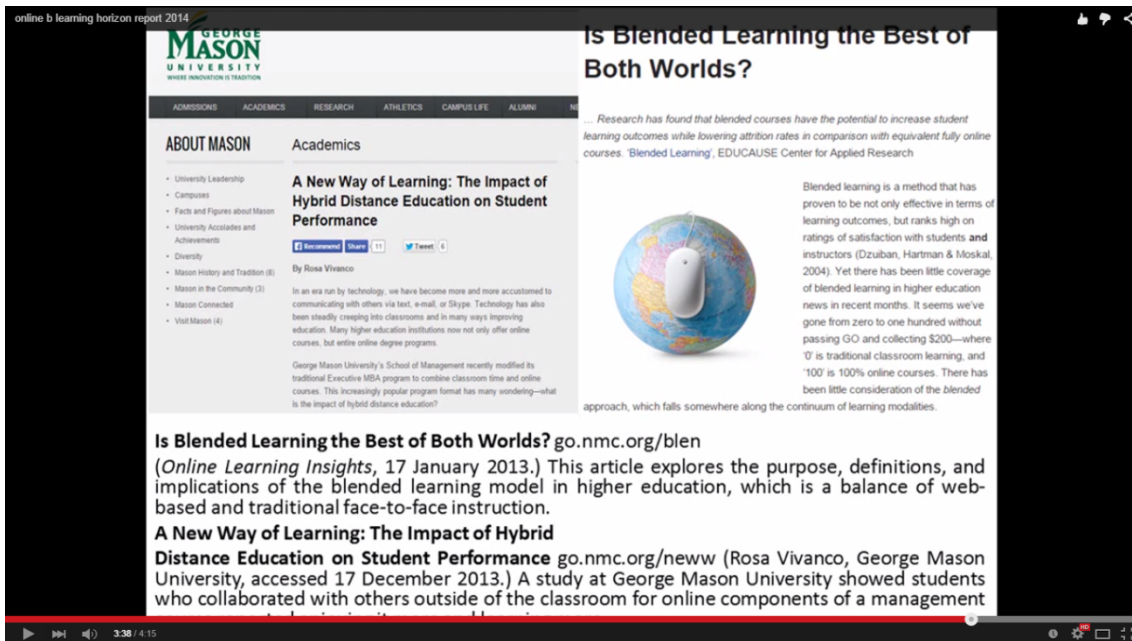
3.- Games and Gamification: <https://www.youtube.com/watch?v=pNcw9-wFPok>



4.- Social media: <https://www.youtube.com/watch?v=wFHHm8SVcRE>

5. - On line, B Learning, Hybrid Learning: [https://www.youtube.com/watch?v=Ps\\_q3JCZM\\_U](https://www.youtube.com/watch?v=Ps_q3JCZM_U)

online b learning horizon report 2014



**GEORGE MASON UNIVERSITY**  
WHERE INNOVATION IS TRADITION

ADMISSIONS ACADEMICS RESEARCH ATHLETICS CAMPUS LIFE ALUMNI

**ABOUT MASON**

- University Leadership
- Campuses
- Facts and Figures about Mason
- University Associates and Achievements
- Diversity
- Mason History and Tradition (8)
- Mason in the Community (3)
- Mason Connected
- Visit Mason (4)

**Academics**

**A New Way of Learning: The Impact of Hybrid Distance Education on Student Performance**

By Rosa Vivanco

In an era run by technology, we have become more and more accustomed to communicating with others via text, e-mail, or Skype. Technology has also been steadily creeping into classrooms and in many ways improving education. Many higher education institutions now not only offer online courses, but entire online degree programs.

George Mason University's School of Management recently modified its traditional Executive MBA program to combine classroom time and online courses. This increasingly popular program format has many wondering—what is the impact of hybrid distance education?

**Is Blended Learning the Best of Both Worlds?** [go.nmc.org/blen](http://go.nmc.org/blen)  
(*Online Learning Insights*, 17 January 2013.) This article explores the purpose, definitions, and implications of the blended learning model in higher education, which is a balance of web-based and traditional face-to-face instruction.

**A New Way of Learning: The Impact of Hybrid Distance Education on Student Performance** [go.nmc.org/neww](http://go.nmc.org/neww) (Rosa Vivanco, George Mason University, accessed 17 December 2013.) A study at George Mason University showed students who collaborated with others outside of the classroom for online components of a management

Research has found that blended courses have the potential to increase student learning outcomes while lowering attrition rates in comparison with equivalent fully online courses. 'Blended Learning', EDUCAUSE Center for Applied Research

Blended learning is a method that has proven to be not only effective in terms of learning outcomes, but ranks high on ratings of satisfaction with students and instructors (Dzuaban, Hartman & Moskal, 2004). Yet there has been little coverage of blended learning in higher education news in recent months. It seems we've gone from zero to one hundred without passing GO and collecting \$200—where '0' is traditional classroom learning, and '100' is 100% online courses. There has been little consideration of the blended approach, which falls somewhere along the continuum of learning modalities.

3:38 / 4:15

## References

- Harris, Judith B.; Grandgenett, Neal; and Hofer, Mark, "Testing a TPACK-Based Technology Integration Assessment Rubric" (2010). *Teacher Education Faculty Proceedings & Presentations*. Paper 18.  
<http://digitalcommons.unomaha.edu/cgi/viewcontent.cgi?article=1014&context=tedefacproc>
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<http://www.nmc.org/pdf/2014-nmc-horizon-report-he-EN.pdf>
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- Sáez López, J. M., y Ruiz Ruiz, J.M. (2012). Metodología didáctica y tecnología educativa en el desarrollo de las competencias cognitivas: aplicación en contextos universitarios . *Profesorado. Revista de curriculum y formación del profesorado*, 16 (3), 373-391. En <http://www.ugr.es/~recfpro/rev163COL9.pdf>
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- Sáez López, J.M., Domínguez garrido, M.C, Mendoza, V. (2014). Valoración de los obstáculos, ventajas y prácticas de e-learning: Un estudio de caso en universidades iberoamericanas. *Educatio Siglo XXI*, 32 (2), 195-220. Recuperado de <http://dx.doi.org/10.6018/j/202221>
- Robles-Gómez, A., Ros, S., Hernández, R., Tobarra L., Caminero, A. C., & Agudo, J. M. (2015). User Acceptance of a Proposed Self-Evaluation and Continuous Assessment System. *Educational Technology & Society*, 18 (2), 97–109. Retrieved from: [http://www.ifets.info/journals/18\\_2/8.pdf](http://www.ifets.info/journals/18_2/8.pdf)



## APPENDIX: Cuestionario RED UVU-UNED (Martín-Cuadrado, A.M. y López-García, M.A. 2011)

Participant assessing: \_\_\_\_\_

Participant(s): \_\_\_\_\_

1	Very Low	2	Low	3	Medium	4	High	5	Very high
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### Subject

1	Teacher Degree of knowledge on the subject	1	2	3	4	5
2	Professor introduces previous concepts and content	1	2	3	4	5
3	Sequenced organization of content	1	2	3	4	5
4	Professor explicit key ideas in his speech	1	2	3	4	5
5	Supports his speech with practical examples	1	2	3	4	5
6	It concludes with a summary of the significant ideas of the topic	1	2	3	4	5
7	After the presentation, he/she suggested discussion	1	2	3	4	5

### Communication

1	Volume and tone of voice is appropriate	1	2	3	4	5
2	The explanation is clear	1	2	3	4	5
3	The teacher expresses ideas with the information that appears on the slides.	1	2	3	4	5
4	The rate used in the communication, allows the assimilation of information.	1	2	3	4	5
5	His speech is coherent and orderly	1	2	3	4	5
6	The teacher uses strategies to gain attention	1	2	3	4	5
7	The teacher maintains motivation throughout the presentation	1	2	3	4	5
8	The teacher has aroused interest in the topic	1	2	3	4	5
9	The teacher invited the recipient to interact through various techniques	1	2	3	4	5

### Resources

1	The teacher uses a dynamic design and effective presentation	1	2	3	4	5
2	It combines current and vintage references, explaining why.	1	2	3	4	5
3	Web references are related to "know-how" that promotes understanding of theory.	1	2	3	4	5
4	The accuracy of the information on each slide, favors the communicability	1	2	3	4	5
5	He/she incorporates audiovisual media in the course of the conference	1	2	3	4	5