



UNIVERSITAT  
POLITÈCNICA  
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# *Learning Analytics in Project Management teaching*

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# Introduction

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- ▶ **Learning Analytics for practical activities:**
  - ▶ Information usually gathered from LMS (Learning Management System) platforms
  - ▶ A big part of the academic activity is performed outside them
- ▶ **Main issues**
  - ▶ Need to define indicators of the academic practice activities
  - ▶ Linking of such indicators with analytical data sources
- ▶ **Proposal**
  - ▶ Concept of *edumarker*
    - ▶ as indicator of “healthy” academic progress
  - ▶ Similar to the notion of *biomarkers* in health contexts

# Introduction

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## ▶ Activity *Edumarkers*

### ▶ Practice context items

#### ▶ Guides

- When practice guides are accessed?
  - “55% of accesses happened during the current session”

#### ▶ Resources

- How many support materials are used during the practice?
  - “An average of three technical documents are read by students”

#### ▶ Deliverables

- What type of tasks are performed and when?
  - “About four exercises are delivered by group every two weeks”

#### ▶ Lab notebooks

- How many entries are annotated?
  - “The total number of project charts varies between 2 and 5”

# Introduction

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## ▶ Proposal of *Edumarkers*

### ▶ Practice Guides

- ▶ #addressed\_goals / #read\_instructions / #accomplished\_tasks

### ▶ Auxiliary resources

- ▶ #number\_accesses (presentation handouts) / #selected\_data (technical specifications)

### ▶ Delivery documents

- ▶ #author\_contributions (written report) / #wrong/correct\_answers (quizzes) / #solved\_exercises (assignments)

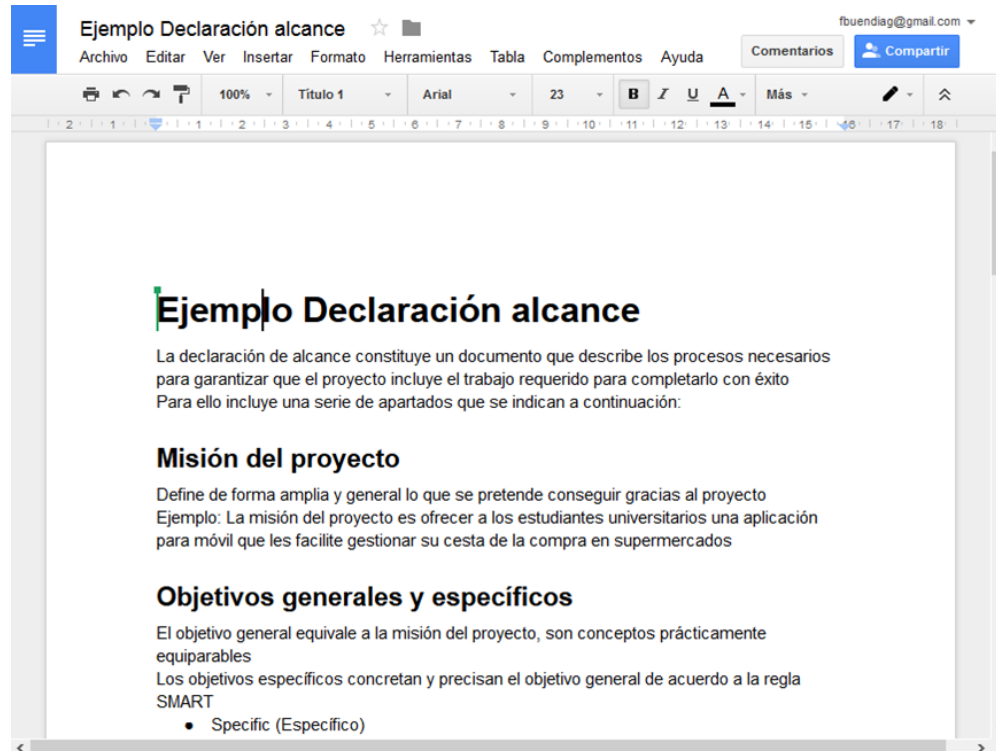
### ▶ Lab notebook

- ▶ #type\_experiences (laboratory record) / #obtained\_charts (experiment results)

# Case study

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- ▶ Project Management course
  - ▶ Sound theoretical contents (PMBOK Guide)
  - ▶ Practical activities depend on the target discipline



# Case study

- ▶ **Poliformat platform**
  - ▶ Statistics tool
  - ▶ Report generation
    - ▶ What?
    - ▶ When?
    - ▶ Who?
    - ▶ How?

**Informe** Especificar título del informe y descripción (obligatorio para guardar/editar el informe). [Mostrar](#)

**¿Qué?** Seleccione actividad a reportar:

Actividad: Recursos

Selección:  Limitar a la acción: Nuevas

Limitar a los recursos:

- T1 - Teoría Diodos BJT\_VAL 14P15.pdf
- T1 Dispositivos - Ejercicios propuestos 15
- T1 - Teoría Diodos BJT\_ESP 15-16 con nota
- T1 - Ejercicios propuestos soluciones 15-
- Tema 3. FAMILIAS LÓGICAS
- Tema 2. MOSFET
- Tema 4- Tecnología CMOS
- Tema 5. Memorias
- Tema 6. REPRESENTACIONAL ALGEBRA

**¿Cuándo?** Seleccione el periodo de tiempo a reportar:

Periodo: Personalizar

Desde: 29/01/16 12:00

Hasta: 17/02/16 13:00

**¿Quién?** Seleccione usuarios a realizar Informe:

Usuarios: Grupo

Grupo: TA-1D

**¿Cómo?** Especificar como serán mostrados los resultados:

Por Totales: Usuario, Herramienta, Evento, Recurso, Acción de recurso, Fecha

Número de resultados:  Limitado a: 0

Presentación: Tabla

# Case study

## ▶ Google Drive

### ▶ Activity Stream

Se ha verificado el dominio. La configuración del correo está pendiente. [Volver a la configuración](#)

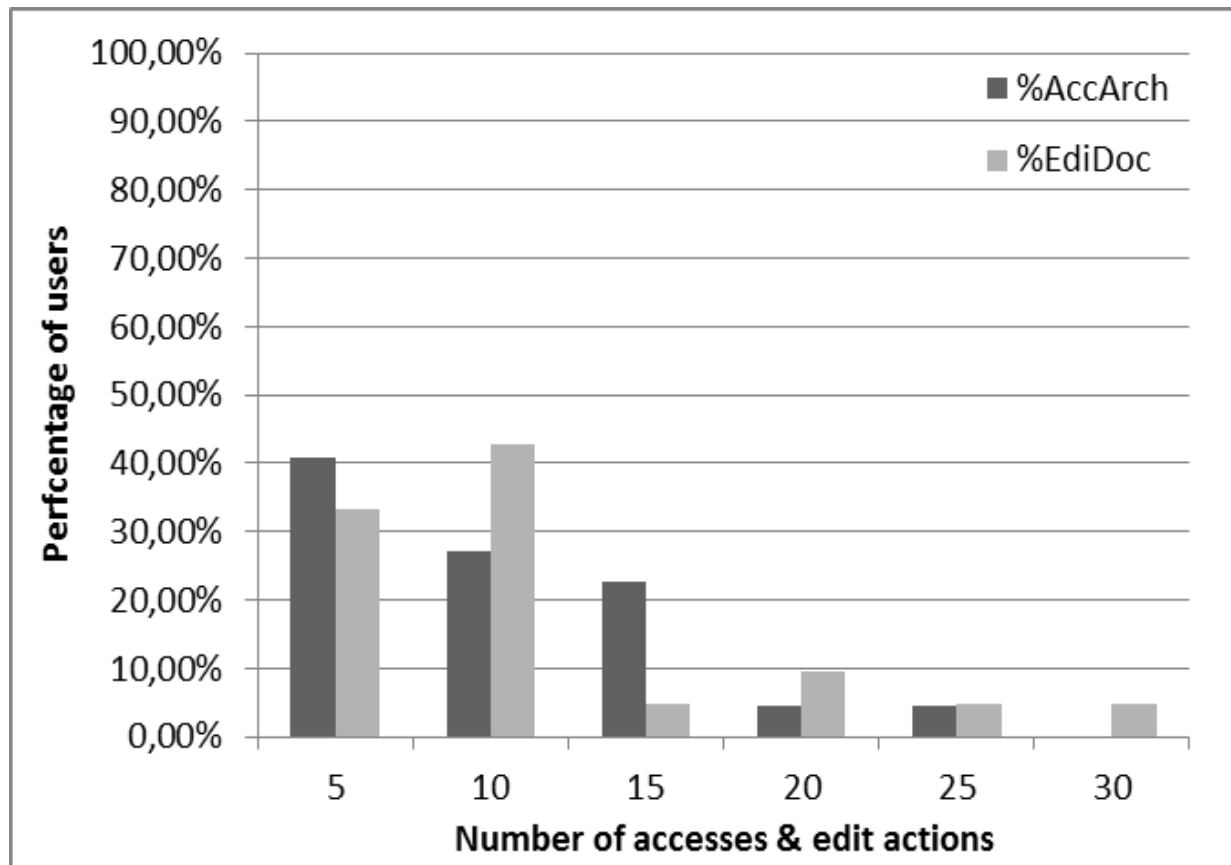
Informes > Drive

| Filtros  | Titulo                    | Descripción del evento                               |
|--|---------------------------|--|
| Nombre del evento<br>Selecciona una opción     | MS Project 1ª parte       | Usuario anónimo ha eliminado un elemento de Bloque 2 |
| Título del documento<br>p. ej., Plan de ventas | MS Project 1ª parte       | Usuario anónimo ha visto un elemento                 |
| ID de documento<br>p. ej., 1RsGhAK4JDYI        | AuditReport-20160420-0851 | Felix Buendia Garcia ha visto un elemento            |
| Nombre de usuario<br>usuario@miempresa.com     | AuditReport-20160420-0851 | Felix Buendia Garcia ha editado un elemento          |
| Propietario<br>usuario@miempresa.com           | MS Project 1ª parte       | Usuario anónimo ha visto un elemento                 |
| Intervalo de fecha y hora<br>De<br>Para        | AuditReport-20160420-0851 | Felix Buendia Garcia ha editado un elemento          |
| ESTABLECER ALERTA                              | AuditReport-20160420-0851 | Felix Buendia Garcia ha visto un elemento            |
|  | AuditReport-20160420-0851 | Felix Buendia Garcia ha editado un elemento          |
|  | AuditReport-20160420-0851 | Felix Buendia Garcia ha creado un elemento           |
|  | MS Project 1ª parte       | Usuario anónimo ha editado un elemento               |
|  | MS Project 1ª parte       | Usuario anónimo ha visto un elemento                 |
|  | MS Project 1ª parte       | Usuario anónimo ha visto un elemento                 |

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# Results

## ▶ Statistics comparison





# Conclusions

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- ▶ There is a high number and diversity of academic information sources
- ▶ The concept of *Edumarker* can help to
  - ▶ structure this huge amount of information
  - ▶ link it to analytical purposes
- ▶ A preliminary case study to show how to
  - ▶ combine data from LMS environments and other frameworks
  - ▶ perform statistics comparisons
- ▶ A lot of research is needed
  - ▶ Systematic definition of *edumarkers*
  - ▶ Tools to manage these indicators



*Learning Analytics* in Project  
Management teaching

Any question?