



Can we apply learning analytics tools in Challenge Based Learning contexts?

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Outline

- Introduction
- CBL Experiments
- LA and CBL
- Experiment
- Conclusions



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New educational approaches

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"What about Instagram?"

CHALLENGE BASED LEARNING

Created from ideas from
Apple Education
by Sonya terBorg
@terSonya



BIG IDEA

A broad concept that can be explored by students in a variety of ways



ESSENTIAL QUESTIONS

Identify what is important to know about the Big Idea and refine and contextualize the idea



THE CHALLENGE

From each question a challenge is articulated. Students will identify a solution that leads to meaningful action.

GUIDING QUESTIONS

Generated by the students, these represent the knowledge needed to successfully meet the challenge.



GUIDING ACTIVITIES

Lessons, simulations, and games that will help students answer the questions.



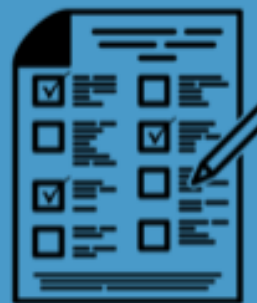
GUIDING RESOURCES

A focused set of resources that will help students in developing a solution.



SOLUTIONS

Each challenge is stated broadly enough to allow for a variety of solutions that are concrete, actionable and publishable.



ASSESSMENT

Both the product of the challenge and the process of carrying out the challenge are assessed.



PUBLISHING

The challenge is expected to be documented and shared with the larger, global community.

How to assess it



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Benefits

- Deeper understanding of different topics
 - Learn how to diagnose and define problems
 - How to develop their creativity
- Students are involved in the problem definition and in the solution process
- Students are aware of the problem and work in a collaborative way with peers from different disciplines
- Students get closer to their community reality and experts
- Connection between what they learn in school and what they perceive of the world around them
- High level communication skills through the use of social tools and media production techniques

Limitations

- Global projects are away from the specific contents of academic subjects
- Students can be more focused on assessments than on learning
- CBL experiments cannot be easily associated to a specific subject in academic contexts
- Students' perception about this approach is not clear because not all the experiments have indicators to evaluate this
- Other roles involved in the project
- The results of the global projects are typically obtained when the academic year has finished
- There is wide choice of tools to use in CBL experiences so evaluation is not easy

Tools

- Tools for information access
- Tools for editing and publishing contents
- Tools for publishing evidences of what was done.
 - Formative assesment
 - ePortfolio, Wiki, meetings
- Tools to facilitate the collaboration and communication of the stakeholders involved in the challenges
- Dedicated tools for specific fields
- Learning environments or ecosystems

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LA and CBL

- How students access to the information
 - Different alternatives great variety
- Tools for editing and publishing contents
 - It is easy if they use a centralized system
 - Formative or sumative assesment
- Tools for publishing evidences of what was done.
 - Again the same diversity problem
- Tools to facilitate the collaboration and communication of the stakeholders involved in the challenges
 - It would be desirable that all students use the same tools to collaborate in CBL projects
- Dedicated tools for specific fields
 - It requires specific analytics functionalities
- Learning environments or ecosystems

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Implementation of an experiment

1st Stage

- Presentation of the model
- Definition of teams
- General idea, essential questions and definition of the challenge
- Access to previous works

2nd Stage

- Activities to deal with the problem
- Access to other samples of this kind of activities

3rd Stage

- Execution
- Access to samples of other activities related to this

4th Stage

- Completion of the product
- Organization of documentation
- Production of videos

5th Stage

- Classification of the results
- Publication

Experiment

- 169 of 183 students of Computer Science and Programming
- 28 teams of 6 persons
- 60 hours
 - 10 dedicated to stages 2, 3 and 4
- Academic life, learning, professional opportunities and knowledge about the degree
- Improve the subject or university context where it is developed
- Summative and formative assesment

Tools employed



	Forum Threads		
Evaluaciones semanales.		Equipo OIE2-10	12
Mapa de responsabilidades		Equipo OIE2-10	7
Cambio en la normativa		Equipo OIE2-10	6
Misión y objetivos		Equipo OIE2-10	13
¡Vuelta al trabajo!		Equipo OIE2-10	1
Evaluación lunes 7 de marzo		Equipo OIE2-10	3
Cronograma		Equipo OIE2-10	11
Sobre la normativa del grupo de trabajo		Equipo OIE2-10	29
Elección de la temática del proyecto		Equipo OIE2-10	8

BUSCADOR DE RECURSOS ACADÉMICOS COLABORATIVOS

Logo: GIDTIC, GRV, and a blue diamond icon.

Búsqueda

CRITERIOS DE BÚSQUEDA

BUSQUEDA PRINCIPAL

FUENTE

CURSO

- 2011-2012
- 2012-2013
- 2013-2014
- 2014-2015
- 2015-2016

ASIGNATURA

PARTES DEL TRABAJO

RECOMENDACIÓN

GRADO

TEMÁTICA

BUSCADOR SEMÁNTICO

- Para realizar una búsqueda debe seleccionar los contextos marcando las casillas en las que tenga interés.
- Puede realizar búsquedas por textos y combinarlas con las búsquedas por contextos.

Challenge information

- [\[redacted\]](#) (discussion thread)
- Team coordinator: [\[redacted\]](#) (discussion thread)

Goal and Aims

- Information
- Rules

Dynamic Scheduling

- Work distribution
- Chronogram

Development

- Challenge approach (discussion thread)
- Work distribution (discussion thread)
- Video Editing (discussion thread)

Results

- [Link to the final result](#)

Show entries

Search:

Nombre de la discusión	Fecha de creación	Mensajes	Mensajes cortos	Mensajes largos	Vistas
Acta del 31 de marzo	2016/04/25 21:12:28	1 (0.4%)	0 (0%)	1 (0.4%)	0
Acta día 21 de abril	2016/04/25 23:00:32	3 (1.21%)	2 (0.81%)	1 (0.4%)	0
Acta reunión 25 de Abril	2016/04/26 11:37:18	1 (0.4%)	1 (0.4%)	0 (0%)	0
Actividades para el 10 de Marzo	2016/02/21 22:25:16	11 (4.44%)	1 (0.4%)	10 (4.03%)	0
Antes del 28 del abril	2016/04/24 18:38:43	4 (1.61%)	0 (0%)	4 (1.61%)	0
BECAS	2016/04/25 19:03:56	15 (6.05%)	6 (2.42%)	9 (3.63%)	0
BUSQUEDA DE INFORMACION SALIDAS PROFESIONALES ISABEL ESPAÑA	2016/04/26 11:49:13	9 (3.63%)	4 (1.61%)	5 (2.02%)	0
Cristina Costales	2016/04/25 22:33:11	13 (5.24%)	2 (0.81%)	11 (4.44%)	0
Cristina García Ocón	2016/04/26 22:59:09	12 (4.84%)	4 (1.61%)	8 (3.23%)	0
Cronograma	2016/04/26 00:14:20	1 (0.4%)	0 (0%)	1 (0.4%)	0

Showing 1 to 10 of 37 entries

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Resultados evaluación sumativa

Show entries

Search:

Nombre	Apellidos	Mensajes	Mensajes cortos	Mensajes largos
		61 (24.6%)	11 (4.44%)	50 (20.16%)
		28 (11.29%)	7 (2.82%)	21 (8.47%)
		32 (12.9%)	13 (5.24%)	19 (7.66%)
		21 (8.47%)	7 (2.82%)	14 (5.65%)
		73 (29.44%)	23 (9.27%)	50 (20.16%)
		33 (13.31%)	11 (4.44%)	22 (8.87%)

Showing 1 to 6 of 6 entries

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Results

- 24 over 28 implement a real solution
- 4 failed because of a mismanagement of teamwork
- Interaction
 - 4685 messages for 169 students
 - 27,71 per student

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Conclusions

- CBL is a learning approach to teaching and learning that allows students use the technology they really use to solve real problems
- The assessment of CBL should take into both the final results and the partial outcomes generated by the team members.
- Evaluation is not easy with the great diversity of tools used to implement this approaches
- It would be desirable to use a learning plataform or something that helps centralization of interaction
- Replicate this experiment in other contexts



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