Training Action 2

Rosario, Argentina
Septiembre, 13 a 15 de 2016

Universidad de Deusto
Javier García Zubía (zubia@deusto.es)
Unai Hernández Jayo (unai.hernandez@deusto.es)

Co-funded by the Erasmus+ Programme of the European Union

Planificación TA2

HORA	Martes 13	Miércoles 14	Jueves 15
9:00 – 11:00	X	**Sesión 2.1: COMENCEMOS A EXPERIMENTAR REMOTAMENTE**	**Sesión 3.1: EVALUACIÓN DEL VISIR Y CON EL VISIR**
11:00 a 11:30		Descanso	
11:30 a 13:30	X	**Sesión 2.2: IMPLEMENTACIÓN DIDÁCTICA**	**Sesión 3.2: ENCUESTA TALLER DE CAPACITACIÓN (TC2)-IMPLEMENTACIÓN VISIR+ RECOLECCIÓN DE DATOS: ENCUESTAS A DOCENTES Y ALUMNOS SOBRE CURSOS PILOTOS UNR. REGISTROS E INFORMES**
13:30 a 15:00	Comida	Comida	Comida
15:00 a 17:00	**Sesión 1.1a: CONTEXTUALIZACIÓN: INTRODUCCIÓN A LOS LABS REMOTOS**	**Sesión 2.3: CÓMO CONFIGURAR EL VISIR EN BASE A NUESTROS OBJETIVOS DIDÁCTICOS**	**FIN DE LAS JORNADAS**
17:00 a 17:15	Descanso	Descanso	
17:15 a 18:45	**Sesión 1.1b CONTEXTUALIZACIÓN: INTRODUCCIÓN AL LAB REMOTO VISIR Y PROYECTO VISIR+**	**Sesión 2.4: ENCUESTA TALLER DE CAPACITACIÓN - IMPLEMENTACIÓN DE VISIR+: RECOLECCIÓN DE DATOS: FICHA CURSOS PILOTOS UNR, DISEÑO DE MÓDULOS EDUCATIVOS** **Preguntas, puesta en común y debate**	
18:45 a 19:15	**Preguntas, puesta en común y debate**	**X**	

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18:45 a 19:15	**Preguntas, puesta en común y debate**	**X**	

Evaluación con y del VISIR

Día 3 – Sesión 3.1
Evaluación del VISIR y con el VISIR

Co-funded by the Erasmus+ Programme of the European Union

Índice

1. ¿Es útil el VISIR respecto del aprendizaje del alumno o …?
2. ¿Puedo saber qué está haciendo un alumno con el VISIR?
3. ¿Puedo evaluar el aprendizaje de un alumno?
4. Hay que convencer a los profesores para que no digan SÍ, SÍ, SÍ (¿quién es peor que los alumnos? La respuesta es …..)

Segundo mandamiento: Yo soy un otro

Aunque VISIR sea gratis, ¿vale para algo?

¿Cómo se mide el valor de un laboratorio remoto?

¿Cuál es el objetivo de un laboratorio remoto?

¿Quién es el protagonista del uso de un laboratorio remoto?

¿Cambia esto para el VISIR?

Trabajo experimental de ISEP en Porto (Portugal)

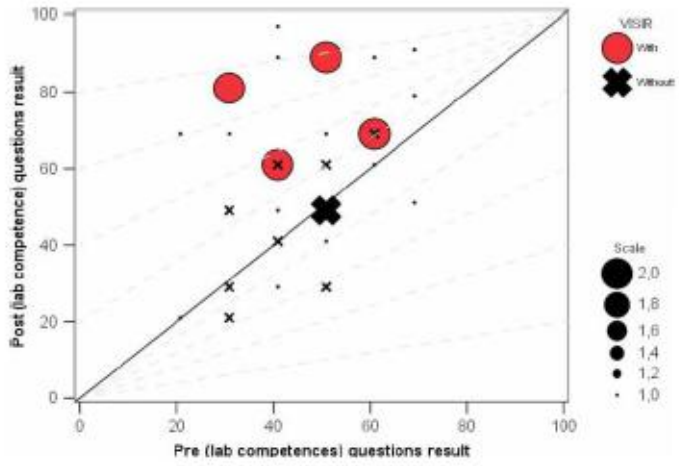


Fig. 7. Case S2: learning gain results in lab competence questior

How Remote Labs Impact on Course Outcomes: Various Practices Using VISIR

Purchase or Sign In to View Full Text | 10 Paper Citations | 407 Full Text Views

7 Author(s) · Maria A. Marques ; Maria Clara Viegas ; Maria Cristina Costa-Lobo ; André V. Fidalgo ; Gustavo

Abstract | Authors | Figures | References | Citations | Keywords

Abstract:
As technology is increasingly being seen as a facilitator to learning, open remote laboratories are inc

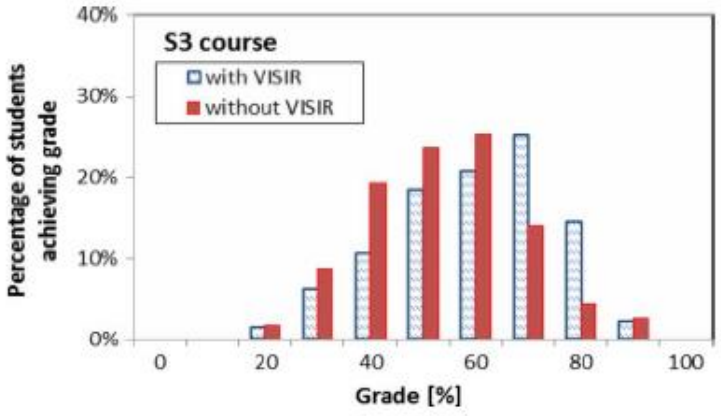
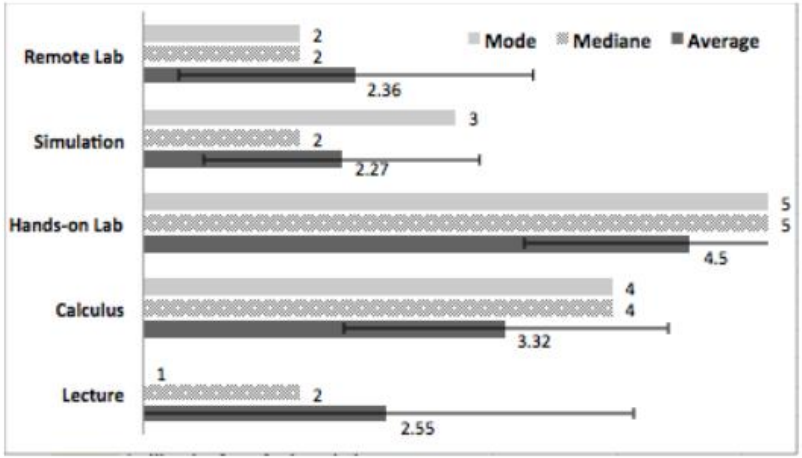


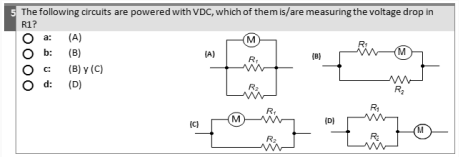
Fig. 8. Case S3: normalized distribution of student results in the lab component.

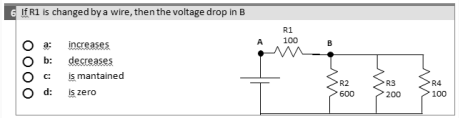
Trabajo experimental de ISEP en Porto (Portugal)

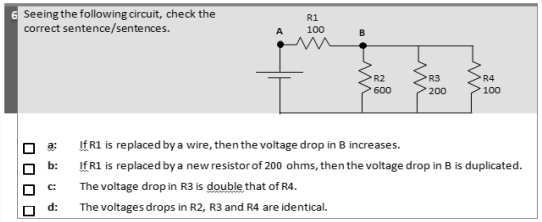
Figure 9: Students' perception of the different learning environments importance

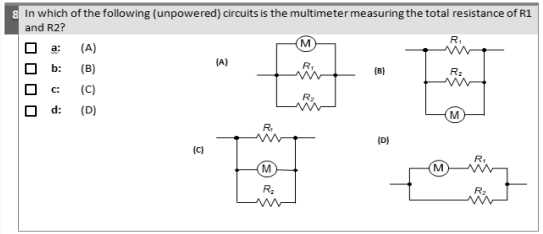


Trabajo experimental de UDEusto en Bilbao (España)







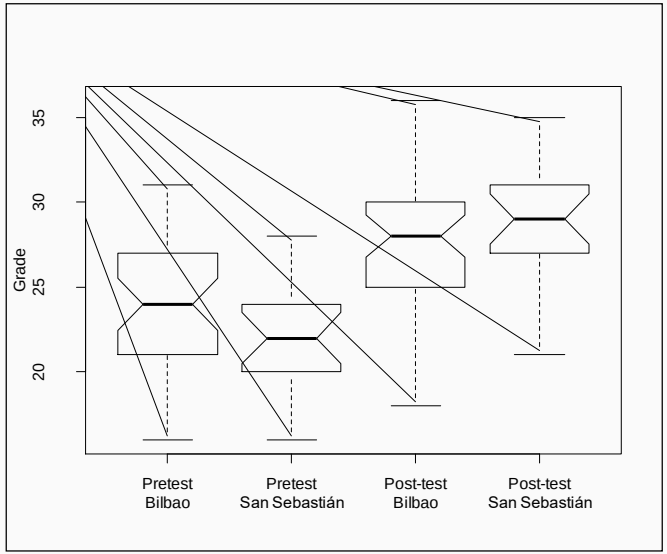


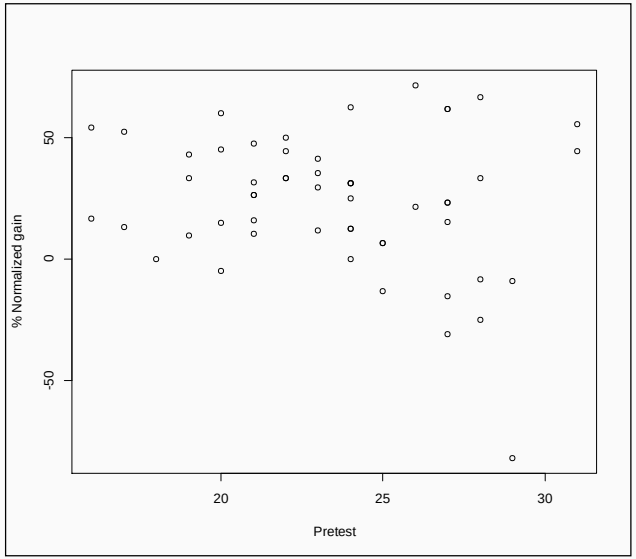
Empirical Analysis of the Use of the VISIR Remote Lab in Teaching Analog Electronics

Javier Garcia-Zubia, *Senior Member, IEEE*, Jordi Cuadros, Susana Romero, Unai Hernandez-Jayo, *Member, IEEE*, Pablo Orduña, *Member, IEEE*, Mariluz Guenaga, *Member, IEEE*, Lucinio Gonzalez-Sabate and Ingvar Gustavsson, *Member, IEEE*.

The reliability of the questionnaire was determined by evaluating its internal consistency through Cronbach's alpha. The value obtained was 0.47 ± 0.07, which even if not very high (a value greater than 0.7 would be desirable), is nevertheless significant and adequate for the purposes of the study, as the comparison is made between groups of students. The test was in any case analyzed item by item to improve it for academic course 2014-2015.

Trabajo experimental de UDEusto en Bilbao (España)





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This difference quantified as Cohen effect size, [36], gives a value of 1.0. This value is considered high in the educational literature meta-analyses, and is close to the values obtained for feedback or for teachers' influence, attending to [37], [38]. This analysis faces the future research indicated by [16].

Finally, the effect of previous knowledge in the improvement in results was been studied. Fig. 9 shows that the normalized gain [39] does not depend on previous knowledge. This independence suggests that the use of remote laboratories favors learning both for students at a low starting level, and for those with higher initial knowledge.

V. Conclusions and Future Work

The main conclusion, based on based on the use of a pre/post-test design (O-X-O) study, is that using the VISIR remote laboratory in basic electronics education helps students in their learning and has a positive effect. This conclusion is statistically significant, and was valid for the five different student groups on two different courses, in three different cities, with three different teachers and two different educational levels. The variety of contexts and the strong evidence collected suggest this positive effect may hold valid for similar activities based on the use of remote labs.

Trabajo experimental de UNR en Rosario, (Argentina)

En este momento es fácil replicar el experimento y dar lugar a una investigación dentro del proyecto VISIR+.

Es un proceso relativamente fácil aunque muy exigente en cuanto a su formalización.

Trabajo bibliográfico de Brinson, AMU (EE.UU.)

ELSEVIER

Computers & Education

Volume 87, September 2015, Pages 218–237

Learning outcome achievement in non-traditional (virtual and remote) versus traditional (hands-on) laboratories: A review of the empirical research

James R. Brinson

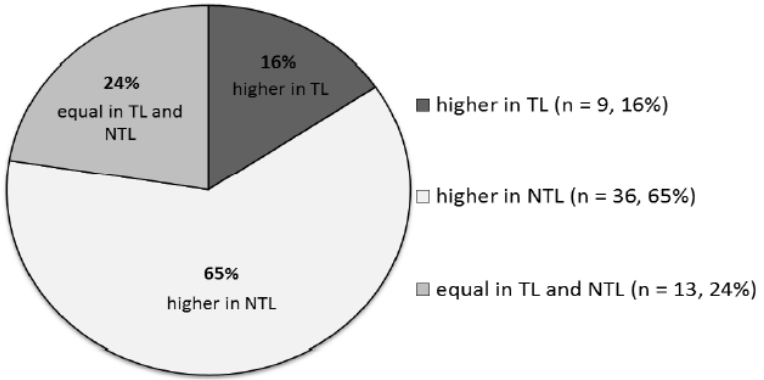


Figure 1. Learning outcome achievement in NTL and TL.

James R. Brinson — Follow

Assistant Professor, School of Science, Technology, Engineering, and Math, American Military University

science education, educational technology, biology, chemistry, online learning

Verified email at mycampus.apus.edu

Title 1–11	Cited by	Year
Learning outcome achievement in non-traditional (virtual and remote) versus traditional (hands-on) laboratories: A review of the empirical research JR Brinson Computers & Education 87, 218-237	3	2015
Teaching and learning with virtual and remote science labs: Observations, trends, and a blended future JR Brinson 21st Annual Online Learning Consortium International Conference, http://ow ...		2015
Virtual and remote science lab effectiveness: What the research says JR Brinson, KL Brinson 20th Annual Conference on Distance Teaching and Learning, http://ow.ly/PMkuX		2014
Five science teachers and a banana: Are traditional labs better than online labs, or just the way it's always been done? JR Brinson 20th Annual Online Learning Consortium International Conference, http://ow ...		2014

Google Scholar

Citation indices	All	Since 2011
Citations	3	3
h-index	1	1
i10-index	0	0

Trabajo bibliográfico de Brinson, AMU (EE.UU.)

Abstract

This review presents the first attempt to synthesize recent (post-2005) empirical studies that focus on directly comparing learning outcome achievement **using traditional lab (TL; hands-on) and non-traditional lab (NTL; virtual and remote) participants as experimental groups. Findings suggest that most studies reviewed (n = 50, 89%) demonstrate student learning outcome achievement is equal or higher in NTL versus TL across all learning outcome categories** (knowledge and understanding, inquiry skills, practical skills, perception, analytical skills, and social and scientific communication), though the majority of studies (n = 53, 95%) focused on outcomes related to content knowledge, with most studies (n = 40, 71%) employing quizzes and tests as the assessment instrument. Scientific inquiry skills was the least assessed learning objective (n = 4, 7%), and lab reports/written assignments (n = 5, 9%) and practical exams (n = 5, 9%) were the least common assessment instrument. The results of this review raise several important concerns and questions to be addressed by future research.

Trabajo bibliográfico de Brinson, AMU (EE.UU.)

> If an institution is offering postsecondary education through distance or correspondence education to students in a State in which it is not physically located, the institution must meet any State **requirements for it to be legally offering postsecondary distance or correspondence education in that State**. We are further providing that an institution must be able to document upon request by the Department that it has the applicable State approval. (Amendments to the Higher Education Act, 2010, 34 C.F.R. §600.9)

The need for research related to the effectiveness of non-traditional learning environments, including the NTL, is being recognized by both educators and policy makers. The United States Department of Education stated in a recent report that —policy-makers and practitioners want to know about the effectiveness of Internet-based, interactive online learning approaches and need information about the conditions under which online learning is effective‖

La “gracia” del Big Data, LA, user tracking y otras lindezas, pero….

puede que un profesor tenga que explicar qué ha hecho, cómo ha participado en un proyecto o en qué se ha gastado el dinero, o

puede que el VISIR+ tenga que dar las mismas explicaciones.

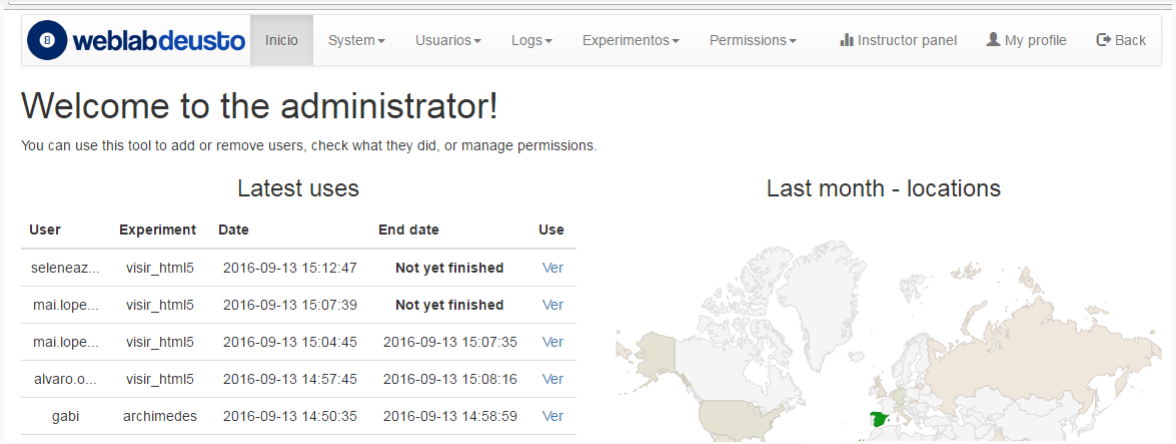
En nuestro caso WebLab-Deusto nos ayuda.

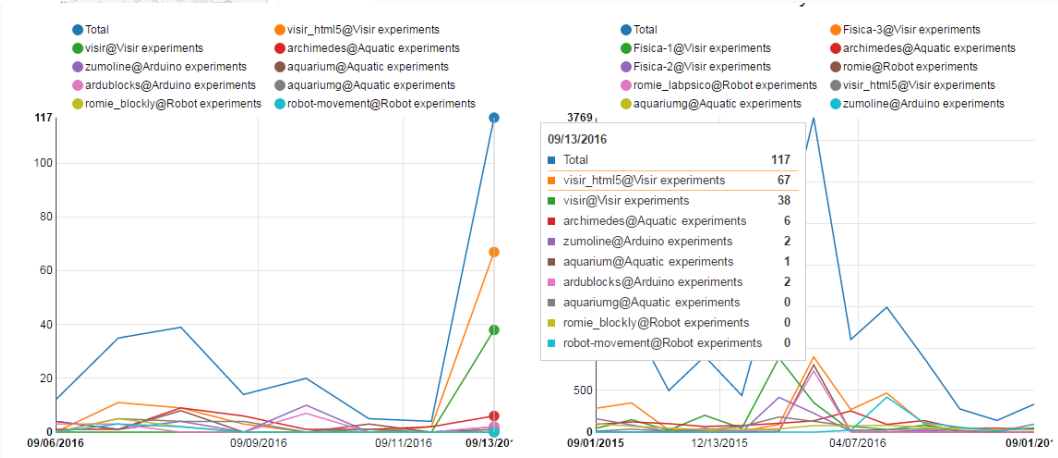
El VISIR que estamos usando aquí está conectado u “ofrecido” por WebLab-Deusto, en vez de usar OpenLabs (tesis y demás).

WebLab-Deusto es una plataforma muy compleja y grande: autenticación, escalabilidad, balanceo, LA, gateway, etc.

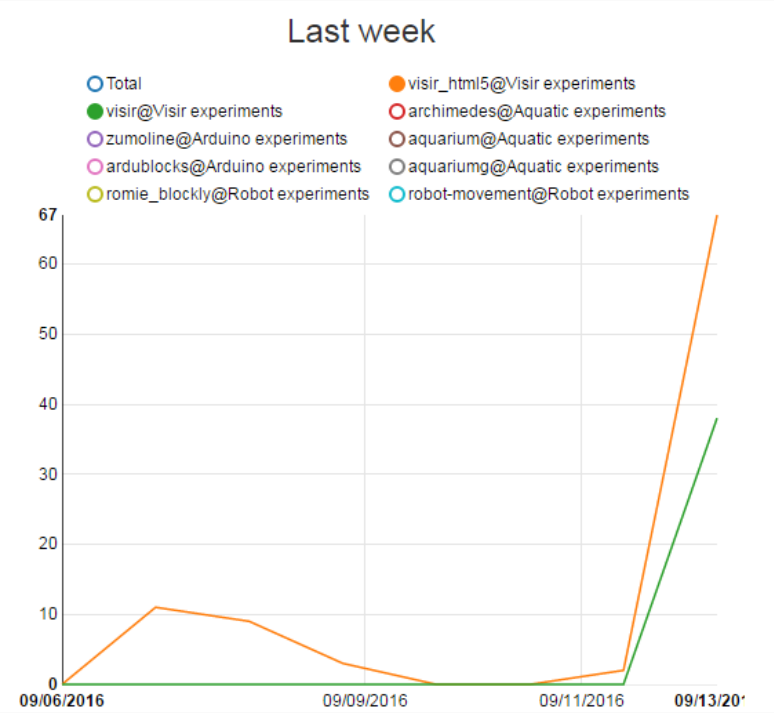
¿Y qué nos da WebLab-Deusto para ayudarnos a explicarnos?

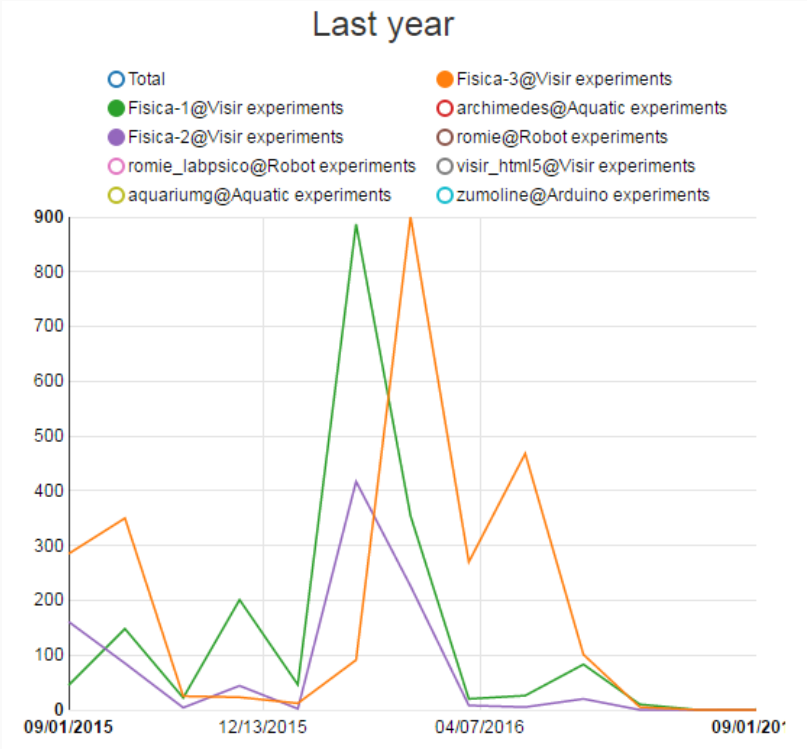
Learning Analytics en VISIR y para VISIR+ en WebLab-Deusto





Learning Analytics en VISIR y para VISIR+ en WebLab-Deusto





Learning Analytics en VISIR y para VISIR+ en WebLab-Deusto

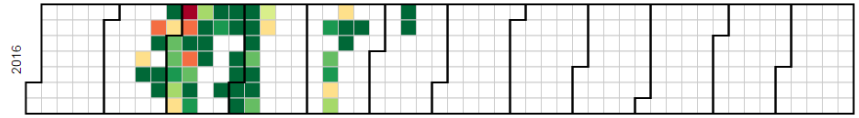
https://weblab.deusto.es/weblab/instructor/stats/groups/groups/128/

Uses

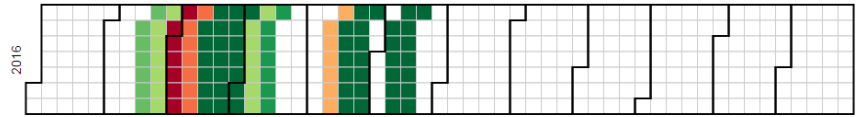
Property	Valor
Users:	19
Usos totales	831 uses (43.74 uses per user)
Tiempo total	1317185.20 seconds - over 15 days; 69325.54 seconds per user

Usage patterns

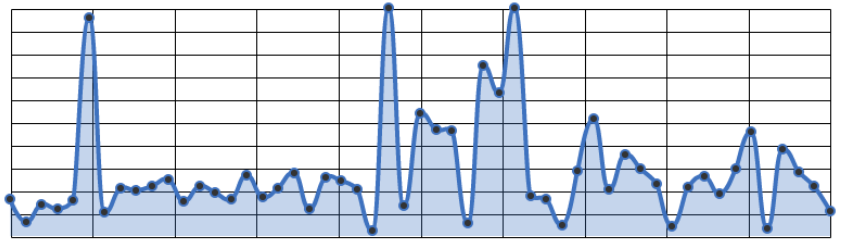
Uses per day



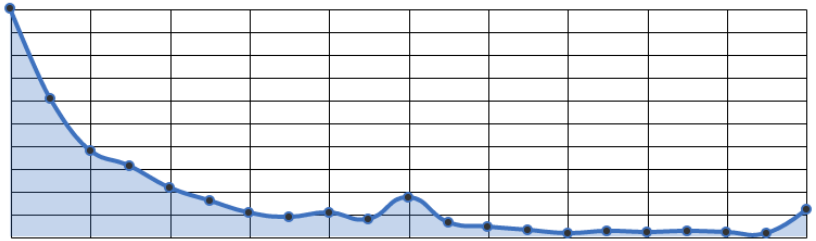
Uses per week



Average time per day



Session time frequency

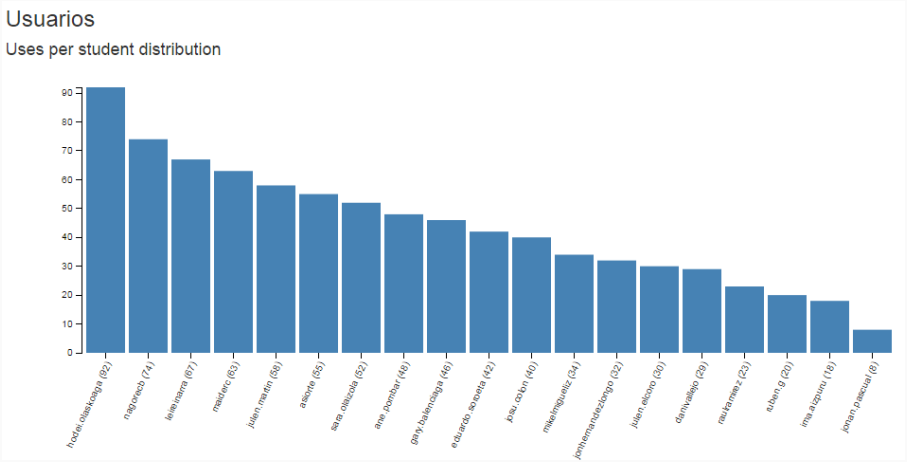


Learning Analytics en VISIR y para VISIR+ en WebLab-Deusto

[POR GRUPO DE CLASE](https://weblab.deusto.es/weblab/instructor/stats/groups/groups/128/)
https://weblab.deusto.es/weblab/instructor/stats/groups/groups/128/

Uses per time of the day

	M	T	W	T	F	S	S
01:00	1						
03:00	3						
04:00	2						
06:00	3				2		
07:00	39		25			1	
08:00	86		90		13	1	7
09:00	70		28		5	11	8
10:00	6	1		2	6	17	20
11:00	1	1		7	5	9	25
12:00	4	3		3	5	10	10
13:00	1			4	5	6	11
14:00	3	2	2	4	3	8	10
15:00	12	4	5	7	8	5	22
16:00	3	3	2	13	9	7	11
17:00	6	3		9	1	10	10
18:00		3		1		5	7
19:00	1	3	3		1	2	11
20:00		2		3	7		14
21:00	2	1		1	3	1	8
22:00		2			1		7
23:00		1					2



Learning Analytics en VISIR y para VISIR+ en WebLab-Deusto

POR CADA ALUMNO
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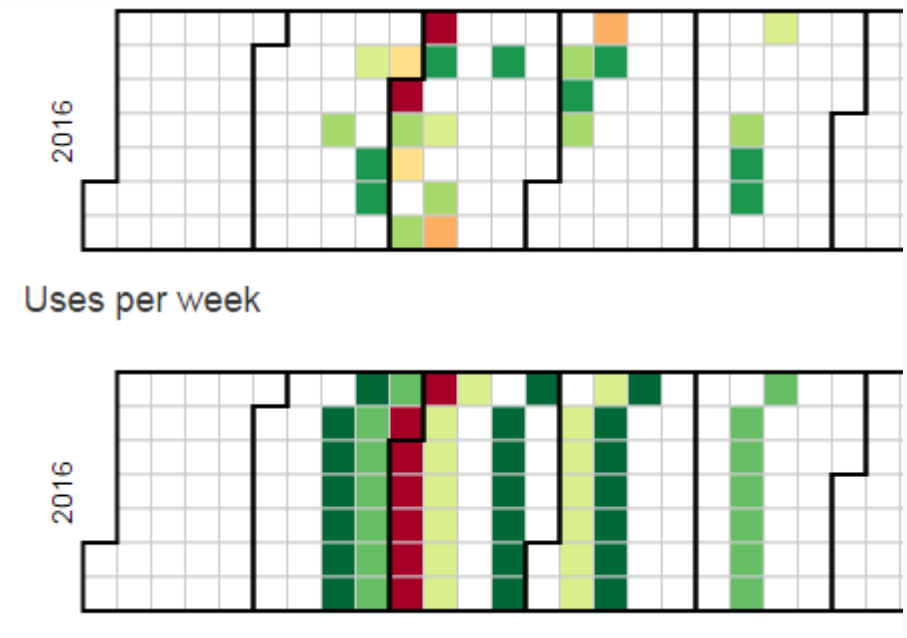

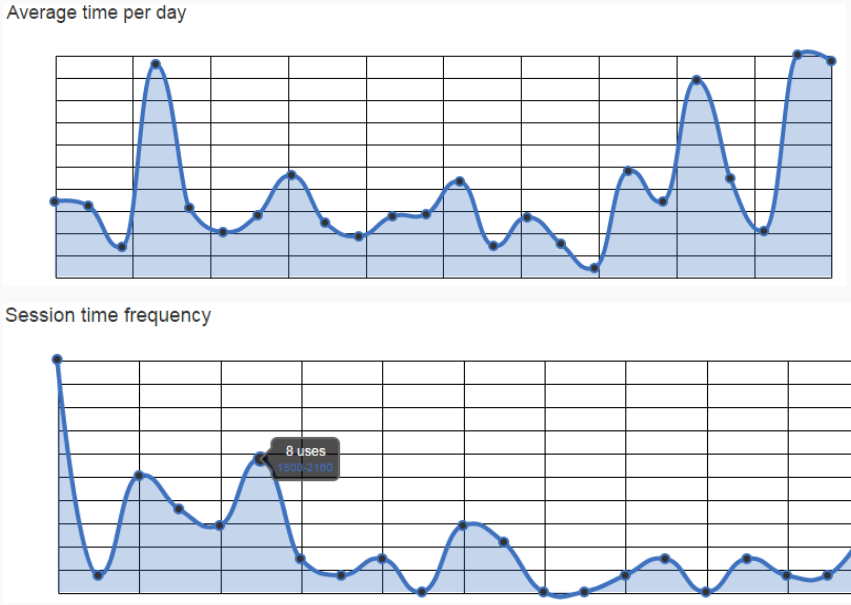

POR CADA ALUMNO
https://weblab.deusto.es/weblab/instructor/stats/groups/users/maiderc/in_group/128

Uses per time of the day

	M	T	W	T	F	S	S
07:00	1		3				
08:00	2		6				
09:00	2		1				
10:00		1					2
11:00							1
12:00		1					1
13:00	1					3	1
14:00		2				2	2
15:00	4	1		1	1		3
16:00		1			1		1
17:00	2	1		2	1		1
18:00				1		1	
19:00			1		1	1	3
20:00		1		2			

Learning Analytics en VISIR y para VISIR+ en WebLab-Deusto

QUÉ HACE CADA ALUMNO
https://weblab.deusto.es/weblab/admin/logs/?flt0_2=maiderc
https://weblab.deusto.es/weblab/admin/logs/interactions/96566
https://weblab.deusto.es/weblab/admin/logs/interactions/97205

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2016-02-22 16:58:56.078899	2016-02-22 16:58:56.083353	GIVE_ME_LIBRARY	failed
2016-02-22 17:01:00.887839	2016-02-22 17:01:01.096517	<protocol version="1.3"> <login keepalive="1"/> </protocol>	<protocol version="1.3"> <login sessionkey="02e8b4a1c892edf6c0dd0a067d225b4c"> </login:
2016-02-22 17:01:01.189023	2016-02-22 17:01:02.431090	<protocol version="1.3"> <request sessionkey="02e8b4a1c892edf6c0dd0a067d225b4c"> <circuit> <circuitlist>W_X DC_COM 0 W_X A5 DC_+25V W_X A13 0 W_X A5 DMM_VHI W_X DMM_VLO A9 R_X A5 A9 1k R_X A9 A13 1k</circuitlist> </circuit> <multimeter> <dmm_function value="dc volts"/> <dmm_resolution value="3.5"/> <dmm_range value="10"/> </multimeter> <dcpower> <dc_outputs> <dc_output channel="6V+"> <dc_voltage value="5"/> <dc_current value="0.5"/> </dc_output> <dc_output channel="25V+"> <dc_voltage value="0"/>	<protocol version="1.3"> <response> <multimeter> <dmm_function value="dc volts"/> <dmm_r <dc_output_limited value="1"/> </dc_output> <dc_output channel="25V-"> <dc_voltage value=

Lo importante son las preguntas que hay que hacer (si la naturaleza es la respuesta….) Si las preguntas no valen nada, las respuestas no tienen valor. Así que pensemos:

-
-
-
-
-
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Learning Analytics en VISIR y para VISIR+ en WebLab-Deusto

Preguntas y debate

Co-funded by the Erasmus+ Programme of the European Union