Go-Lab

Global Online Science Labs for Inquiry Learning at School

Collaborative Project in European Union's Seventh Framework Programme

Grant Agreement no. 317601

Deliverable D7.6

Report on development of the virtual Go-Lab user community

Annexes to D6.7

Report on development of the virtual Go-Lab user community

Report on Implementation Activities Phase-C

Editor/Main Author: Georgios Mavromanolakis, Rosa Doran

Date: 31 October 2016

Dissemination Level: Public

Status/Version: Final

The Go-Lab Consortium

Beneficiary Number	Beneficiary name	Beneficiary short name	Country
1	University Twente	UT	The Netherlands
2	Ellinogermaniki Agogi Scholi Panagea Savva AE	EA	Greece
3	École Polytechnique Fédérale de Lausanne	EPFL	Switzerland
4	EUN Partnership AISBL	EUN	Belgium
5	IMC AG	IMC	Germany
7	Universidad Nacional de Educación a Distancia	UNED	Spain
8	University of Leicester	ULEIC	United Kingdom
9	University of Cyprus	UCY	Cyprus
10	Universität Duisburg-Essen	UDE	Germany
11	Centre for Research and Technology Hellas	CERTH	Greece
12	Universidad de la Iglesia de Deusto	UDEUSTO	Spain
13	Fachhochschule Kärnten – Gemeinnützige Privatstiftung	CUAS	Austria
14	Tartu Ulikool	UTE	Estonia
15	European Organization for Nuclear Research	CERN	Switzerland
16	European Space Agency	ESA	France
17	University of South Wales	USW	United Kingdom
18	Institute of Accelerating Systems and Applications	IASA	Greece
19	Núcleo Interactivo de Astronomia	NUCLIO	Portugal
20	Cardiff University	CU	United Kingdom

Contributors

Name	Institution	Role
Georgios Mavromanolakis	EA	Work Package 7 Leader, National Coordinator in Greece, Romania, Bulgaria
Evita Tasiopoulou	EUN	National Coordinator in Belgium, Italy, Poland
Danilo Zutin, C. Kreiter	CUAS	National Coordinator in Austria
Kristina Angenendt	UDE	National Coordinator in Germany
Rosa Doran	NUCLIO	National Coordinator in Portugal
Olga Dziabenko	UDEUSTO	National Coordinator in Spain
Barbora Gulejova	CERN	National Coordinator in Switzerland
Henny Leemkuil	UTE	National Coordinator in Netherlands
Fraser Lewis	CU	National Coordinator in UK

Legal Notices

Executive Summary

This document contains the Annexes to the joint deliverable D6.7 entitled “Report on development of the virtual Go-Lab user community – v2” and “Report on Implementation Activities Phase-C”. In Annex I we present the reports from all engagement activities conducted by the partners during the last phase of the project. In Annex II we present the reports on implementation activities conducted by the partners during Phase C. In Annex III we present the full report on the Go-Lab contest 2016. In Annex IV we present the full report on the Go-Lab summer school 2016. Finally, in Annex V and VI we present the full summary of the summative online survey and the community support framework survey respectively

Table of Contents

Annex I to the "Report on development of the virtual Go-Lab user community – v2"

	Austria	Belgium, Poland and Italy	Cyprus	Estonia	Germany	Greece, Romania and Bulgaria	Netherlands	Portugal	Spain	UK	Total
Teachers Participating in engagement activities	34	55	0	0	19	0	21	65	105	0	**299**
Teachers Participating in engagement activities	5	65	32	66	16	107	42	291	87	22	**733**
Teachers Participating in engagement activities	2	31	7	0	5	36	42	30	22	0	**175**
Total numbers	41	151	39	66	40	143	105	386	214	22	**1207**

I.1 Austria

G O - L A B Event Code	[AT13-050716]
Context: standalone event or combined with other ws, online or face to face	Standalone; online
Country City/Region	Austria
Working language	German
Start/End Date	05/07/2016
Organizing Institute	CUAS
Coordinator name and email	Danilo Zutin [d.garbizutin@fh-kaernten.at] Christian Kreiter [c.kreiter@fh-kaernten.at]

Total number of teachers/ schools	1/1
Other stakeholders involved	-
Brief description	The workshop only had one participant – a teacher who created, implemented and published an ILS about electromagnetic induction - in general as well as inside generators. Therefore, the workshop was held as an informal discussion. The two main points were: Teacher's personal experience Summative discussion
Facilitators Observations	The teacher knows the Golabz website, as well as how to use the Graasp platform. He had the chance to share his experiences with the colleagues at his school and some of them are interested to use it. They see the apps and labs as the most attractive tools of the platform.
Theme analysis and reporting from implementation activities	Our team had an online workshop with this teacher on 31.05.2016 where we showed him the Golab project, including the Golabz-website with labs, apps and inquiry spaces. Further we gave an introduction to the Graasp platform. From that moment on the teacher worked completely independent on the creation of his own ILS which was published later on (http://www.golabz.eu/spaces/elektromagnetische-induktion-generator). The ILS was implemented with two of his classes (40 students) and lasted one didactic hour.
Group discussion/ reflection	Due to the fact we had only a few active teachers we choose to make an informal 1-to-1 discussion.
Experiences of Teachers with the Go-Lab activities	The teacher created his very own ILS, implemented and published it.
Perceived Experiences / Influence of the Go-Lab Activities on Students	The students' experience was very positive. Students were able to better understand the concepts and learning outcomes were improved. Students were more motivated than in traditional lectures.
Influence of Go-lab in the professional development of the teacher	Teacher is pleased about new possibilities to enrich his lectures. He sees Inquiry based learning as an interesting method to motivate students and sees improved learning outcomes.
Expected Influence of the Go-Lab Activities on School Settings and Curriculum	Teacher wants to use Golab in more lectures. Additionally, he would like to involve older students with the creation of an ILS.
Challenges and Improvements of the Go-Lab model	Had problems running Graasp under Firefox and IE. It worked only with Chrome. It was not possible for him to delete students (standalone users).
Reflection through questionnaire	1

Website	-
Photos or other relevant material	No photos made since workshop was held online. ILS created by the participating teacher: 
Event agenda	-

G O - L A B Event Code	[AT13-080716]
Context: standalone event or combined with other ws, online or face to face	Standalone; online
Country City/Region	Austria
Working language	German
Start/End Date	08/07/2016
Organizing Institute	CUAS
Coordinator name and email	Danilo Zutin [d.garbizutin@fh-kaernten.at] Christian Kreiter [c.kreiter@fh-kaernten.at]
Total number of teachers/schools	1/1

Other stakeholders involved	-
Brief description	The workshop only had one participant – a teacher who created, implemented and published an ILS about bending moments of construction material. Therefore, the workshop was held as an informal discussion. The two main points were: Teacher's personal experience Summative discussion
Facilitators Observations	The teacher knows the Golabz website, as well as how to use the Graasp platform. He has a positive view on the platform and wants to show Golab to the colleagues of his school. However, he didn't show any particular interest in contributing in social media, i.e. blog or tutoring platform.
Theme analysis and reporting from implementation activities	After the Teacher Workshop on the 24.05.2016 the participating teacher created an ILS in German with the title "Biegemoment" (en: bending moment). The ILS was implemented with one of his classes (27 students) on the 08.07.2016. This summative workshop was held on the same day in the afternoon. Teacher guided the students through the phases. Students were engaged, although some were insecure because the ILS contained formulas and students had to calculate on their own. He realized that on some points more guidance is necessary to avoid 'chaos'.
Group discussion/ reflection	Due to the fact we had only a few active teachers we choose to make an informal 1-to-1 discussion.
Experiences of Teachers with the Go-Lab activities	The teacher created his very own ILS, implemented and published it.
Perceived Experiences / Influence of the Go-Lab Activities on Students	ILS was successfully implemented together with 27 students. The teacher worked with the Graasp tool mostly on its own, but needed help on some steps because of bugs in the tool. The main issue was that formulas were written in Tex-format and sometimes were not transformed on-screen.
Influence of Go-lab in the professional development of the teacher	Inquiry based learning approach is an interesting concept for the teacher, which he wants to try out further, because it motivates the students. However, the teacher has no long-term experience to give a concrete answer on the influence of Golab.
Expected Influence of the Go-Lab Activities on School Settings and Curriculum	According to the teacher students liked the implementation of the ILS. So far this was just a test and he wants to have look after the summer holidays if ILS' can be used as part of the curricula.
Challenges and Improvements of the Go-Lab model	Not every computer displayed the ILS correctly – every computer had same hardware and OS, but some students used Firefox and some used Chrome. However, the teacher found this out after the implementation and could not verify if the different browsers caused the problem. On one computer the input fields were inactive On another computer the formulas were displayed in TeX mode On at least two computers some questions of the quiz tool were missing Some students had problems with the basics, others not. The ILS contained formulas. According to the teacher it's better to print out the formulas and let the students convert them directly on the sheet of paper. Exercises have to be guided more thoroughly by the teacher to avoid chaos.

	Students also filled out the “Students Evaluation form” – according to the teacher it contained too many questions. Checking students’ answers is time consuming in Graasp – using printed questionnaires is less troublesome.
Reflection through questionnaire	1
Website	-
Photos or other relevant material	No photos made since workshop was held online. ILS created by the participating teacher: 
Event agenda	-

I.2 Belgium, Italy and Poland

G O - L A B Event Code	[INTEUN-190416]
Context: standalone event or combined with other ws, online or face to face	Standalone online event
Country City/Region	Online
Working language	English

Start/End Date	19/04/16
Organizing Institute	European Schoolnet
Coordinator name and email	Enrique Martin, enrique.martin@eun.org Evita Tasiopoulou, evita.tasiopoulou@eun.org
Total number of teachers/schools	5 teachers
Brief description	This online workshop took place in English, addressing teachers from the International, Belgian, Italian and Polish groups. The aim of the PRW was to collect information on teachers Go-Lab experience along with their suggestions and feedback..
Facilitators Observations	Low participation was the downside for this event. Still due to the reduced size of the group, there was a high level of participation and interaction among the participants. Participants were eager to listen was kind of issues had their colleagues been facing. In general terms, both pros & cons were common to all teachers as will be further on detailed later in this document.
Theme analysis and reporting from implementation activities	The themes following themes intended for discussion were the following: their experience with Go-Lab, the usefulness of Go-Lab in their teaching, the impact of Go-Lab in their teaching, the students' reactions, the cross curricula activities, the challenges for the Go-Lab system, the recommendations, necessary pedagogical changes and improvements for Go-Lab to be more advantageous in the teaching practice.
Group discussion/ reflection	
Experiences of Teachers with the Go-Lab activities	All teachers attending the workshop were beginners and had a limited experience with Go-Lab. Most had either implemented already ILS or used some of the apps and labs (especially the later). Teachers had previous experiences with other science projects such as etwinning and had done partial attempts of including IBSE methods in their lessons. Language was a limitation mentioned in many cases, although they all mentioned it did not stop them from using Go-Lab. They all expressed their intention of becoming more experienced, attending more trainings and being able to start creating/translating their own ILSs.
Perceived Experiences / Influence of the Go-Lab Activities on Students	Teachers highlighted the usefulness of Go-Lab for two main reasons: because they enjoy it and because their students like it too. Students find the use of ILSs very engaging and interesting. Students need some time to get used to the use of the various tools and ILSs structure but once they do then there is no problem. According to participants, online labs enable students to conduct many different type of experiments that otherwise could not be developed, due to time, resources and complexity issues. It was mentioned in several occasions, that being very useful for teachers and students even when considering very basic implementations such as the use of Labs, they do believe the benefits would grow exponentially if teachers had more chances to learn and become confident and competent with the software. As for implementation within primary students, they more or less agreed that the current ILS were far for being useful at this level. Again in relation to students, the issue of translation and the need to provide them ILSs in their own language, was also raised up by most of the teachers.

Expected Influence of the Go-Lab Activities on School Settings and Curriculum	Teachers had shared already experiences with other colleagues at their schools. First reactions were fear to the online activities and especially to the fact that most of the tools were in English. Those who manage to keep interest, were encourage by the simplicity of some of the apps and labs. Most of the participants agreed, that the rest of colleagues would only show interest when small demonstrations were made. All of participants expect to increment their use, especially when dealing with ILSs that present easy linkages to their existing curriculums.
Challenges and Improvements of the Go-Lab model	Teachers agreed that more training and support is needed in order to ensure their ability to work with Graasp efficiently. More experience would enable them to share with other colleagues, right now they do not feel comfortable enough when trying doing so. Most of the ILS are applicable to the curriculum. Experience will enable them to adapt those which are not. All teachers mentioned it was very hard for them to find time to experiment with Go-Lab. Most believed the webinars and online workshops where a very interesting option.
Reflection through questionnaire	4
Website	*n/a*
Photos or other relevant material	
Event agenda	I Agenda **I.1 Workshop duration: 1h30 (depends on the number of participants)** **1. Introduction of the workshop – 5 mn** Welcome and aim of this workshop **2. Teachers' personal experience – 15 mn** Ask teachers to talk about their own experience with Go-Lab and provide information on the ILS they have chosen (or created) and how they have used it in their classroom. **3. Reflection on their work – 30 mn** Teachers – helped by a facilitator – will be asked to discuss/debate about: 4. The usefulness of Go-Lab in their teaching 5. The potential impact of the use of the Go-Lab project on teachers and students 6. The potential impact of some ILSs on some teachers' collaboration / multidisciplinary activities 7. The challenges faced and barriers of use 8. Recommendations for creation of ILSs or for the project in general **9. Evaluation – 10mn** Teachers fill in the WP6 usability questionnaire (online) http://tinyurl.com/golab-prw **10. Wrap up and final questions and answers (if any)– 5mn**

G O - L A B Event Code	[INTEUN-230516]
Context: standalone event or combined with other ws,	Face to face workshop organized in the framework of a TI DLP workshop at the Future Classroom Lab.

online or face to face	
Country City/Region	Belgium, Brussels
Working language	English
Start/End Date	23/05/16
Organizing Institute	European Schoolnet
Coordinator name and email	Enrique Martin, enrique.martin@eun.org Teodora Ioan, teodora.ioan@eun.org Evita Tasiopoulou, evita.tasiopoulou@eun.org
Total number of teachers/schools	15 teachers
Brief description	The was held in English, addressing an International group of teachers invited to the TI DLP workshop at the Future Classroom Lab (2nd session). The aim of the PRW was to collect information on teachers Go-Lab experience along with their suggestions and feedback.
Facilitators Observations	As already observed, this workshop was the second of a series of workshops conducted within the TI DLP programme. During the first session, teachers were given a general introduction and had the possibility to start working on their own ILS which they would further develop once back home. This means that the group of teachers, while not participating directly in the project had quite an experience, thus, equally knowledgeable and critical during the discussion. Finally, while not having that much specific Go-Lab experience, most of the teachers were quite diligent with IBSE methods and had participated in a number of science education projects.
Theme analysis and reporting from implementation activities	The teachers discussed the following themes with the whole group, while sharing their overall experience with Go-Lab: the usefulness of Go-Lab in their teaching, the impact of Go-Lab in their teaching, how to change ILSs to empower students to reflect and develop their own learning, apps & labs integration, evaluation, issues best practices and recommendations. Special emphasis was given to evaluation apps and their integration in ILS during the second part of the workshop.
Group discussion/ reflection	
Experiences of Teachers with the Go-Lab activities	All teachers designing their ILS (individually or in groups) after an introductory session on the same TI DLP workshop months before. Most of the feel that they need to develop them further, especially in what regards to evaluation. Teachers felt (in general) quite confident with the use of apps and labs even though their experience with Go-Lab was limited. Teachers had previous experiences with other science education projects and including IBSE methods in their lessons. Most teacher expressed their intention of becoming more experienced, attending more trainings and creating more ILSs. Some of them though, complained about the “complexity” of the tool and the malfunctioning of certain apps. In general terms, all participants had a very positive experience when working in pairs or groups to develop their ILSs. It is worth remembering that the

	creation started in the previous workshop, but teachers had followed up online with their group colleagues and forwarded their ILSs to us once finished.
Use and integration of Go-Lab evaluation apps	Hardly any of the teachers attending the workshop had attempted to include evaluation apps in their ILS. Most of them commented on their intention of including both evaluation and especially "tracking apps", but those of them who had tried with the latter have encountered a number of issues such as: - not being able to add them to their ILS. - adding them, but not obtaining any results. - adding them, functioning, but producing a large amount of unclassifiable data (which appeared to be the most common scenario). Teachers were quite frustrated in this regard and when checking it during the workshop, they obtained the same results they had obtained during their lessons or when testing it at home. After the discussion, teachers tried by groups to include some of the tracking apps we had tested in their own ILS and seemed to be working fine.
Challenges and Improvements of the Go-Lab model	Monitoring the correct functioning of the tracking results apps, ensuring and understandable display of the collected data, that may be exported and downloaded for evaluation purposes. Further development of evaluation apps, easily applicable to preexisting ILSs and connected to the tracking apps. Promotion of teacher collaboration for the creation of ILS, not only from teacher to teacher but also between different departments (cross curricular). Sustained training programme aiming to engage those teachers who encounter more difficulties when attempting the implementation of Go-lab in their classroom (especially on-line for easier access).
Reflection through questionnaire	-
Website	n/a
Photos or other relevant material	List of ILSs created by the participanting teacher: Jolanta Grzywnowicz – Art inspired by mathematics or Exploration of Linear Function or Symmetries. http://graasp.eu/ils/56fab9e15829e7041c1018b7/?lang=pl (Richard, Julia, Jan) – DNA. http://www.golabz.eu/spaces/dna-structure Jan Roza: BMI (body mass index), count of fats inside the body and create healthy menu. http://www.golabz.eu/spaces/bmi-telesny-tuk-jidelnicek-ti-dlp Richard Fisher – Rates of reaction. http://www.golabz.eu/spaces/rates-reaction-ti-dlp Siegfried, Jola and Jan - Math scenario on linear functions f(x) = ax+b. http://graasp.eu/ils/5694d60984f279b7b2c42c84/?lang=en Siegfried Maillard Math scenario for 11 year old students about division (in French). http://graasp.eu/ils/56d16ea75829e7041c1006a0/?lang=fr Jeanette & Jenny – Holograms. http://www.golabz.eu/spaces/hologram Marie-Hélène Escourolles from France Foucault's pendulum. http://graasp.eu/spaces/56a5e1202e8c417a1cb47dbf
Event agenda	**Agenda** **Opening: Welcome + Ice breaker – 5 min** Welcome and aim of this workshop followed by a fast ice-breaking Go-Lab game: **Find the ILS!** (Several images extracted from the most popular ILSs are presented. Participants will have to guess to which ILS they belong to). **Introduction: Sharing scenarios and experiences – 30 min**

	Teachers will present their ILSs, with accent on the apps & labs that they have used; ** Focus points: What worked? What didn't? Any advice?* Teachers in the audience have to take notes on: "One thing that you have seen in the other presentations and would like to incorporate into your own ILS" and "How do you plan to change your ILS, based on what you have seen in the work of others?". **Explore APPs to enrich GRAASP scenarios – 45 min** Explore "evaluation" apps in the Graasp scenarios (individually); Small group discussion on how evaluation tools could be integrated into their ILS; ** Aim: Highlighting a set of apps and one clear idea of how they will change their ILS to empower students to reflect and develop their own learning.* A representative of each group shares their main ideas with the rest of the teachers. **Work in groups with an exemplar scenario(s): Enrich and extend – 30 min** Teachers start working in their ideas (either in groups or individually). **Wrap up and final questions and answers (if any)** Link to the WP6 online usability questionnaire is provided (to be fill in once home). http://tinyurl.com/golab-prw

G O - L A B Event Code	[INTEUN-020516]
Context: standalone event or combined with other ws, online or face to face	Standalone online event
Country City/Region	Online
Working language	English
Start/End Date	02/05/16
Organizing Institute	European Schoolnet
Coordinator name and email	Enrique Martin, enrique.martin@eun.org Evita Tasiopoulou, evita.tasiopoulou@eun.org
Total number of teachers/schools	8 teachers (8 questionnaires completed)
Brief description	This online workshop took place in English, addressing teachers from the International, Belgian, Italian and Polish groups. The aim of the SW was to collect global information on teachers who already have a broader experience with Go-Lab, identify common themes and collect recommendations and suggestions.
Facilitators Observations	Participants were diverse and very active during the discussion, diverse not only for their nationalities, but also for their different levels of experience and approaches when using Go-lab. Most of the teacher had overall positive comments and were looking forward to keep on experimenting with Go-Lab.

Common themes identified in the discussion	As already mentioned, you could tell from the comments during the introduction game and the teachers personal experience section, that the Go-Lab experience had had a positive impact in their teaching. The experience with the ILSs was quite different, still most of them mentioned a number of ILSs which seemed to be popular within the group such as: • Meteori • Faulkes Telescope • Industrial Melanism • Electrical circuit lab At least half of the teachers had created their own ILS, however, participants did not get into details about them. Most of the teachers agreed that the creation of the first ILS meant a lot of work and still, it was quite fun. As for the rest, some of them commented they were planning on creating their own ILSs the coming year. Reasons for continue using Go-Lab in their lessons: • It is an innovative way of teaching. • It engages students easily. • Students really enjoy the lessons. • It enables students to work at their own speed. • Easy access. • It helps you developing your ICT skills. • The possibility of using both virtual and remote labs. • Pupils do science research while improving their English. • Students perceive the use of Go-Lab during the lessons as playing. As for the things teachers liked the most, which is closely connected to the reasons for using Go-Lab in the future, teachers insisted in a number of ideas: the fact that students thought they were playing instead of learning and that playing, was the best way of learning; having access to lab materials and experiments they would not be able otherwise; and how engaging the ILS, labs and apps were for students. Regarding Go-Lab's contribution to their knowledge of IBSE and the development of ICT skills, teachers did not get into specifics, but all of them agreed it had helped with both, especially with IBSE, since it simplifies progressive ways of teaching science.
Examples illustrating common themes	-
Recommendations made by participants	Promote further trainings at all levels: life and on-line workshops, webinars. Tutorials for the ILS: how it was created, how to implement it. More systematic and responsive mechanisms for teachers to be able to confront any possible technical issues with ILS, labs and apps. Translation of resources. Learning analytics apps are the ones giving more problems to teachers, improve them and include evaluation tools.
Website	n/a

Photos or other relevant material	
Event agenda	II Agenda **II.1 Workshop duration: 1h-1h30 (depending on the number of participants)** **11. Introduction of the workshop – 5 min** Welcome and introduction to the workshop. Go-Lab game: Find the ILS! (Several images extracted from the most popular ILSs are presented. Participants will have to guess to which ILS they belong to). **12. Teachers' personal experience – 15 min** Ask teachers to briefly present their overall experience with Go-Lab and comment on their favourite ILS (they have been asked to think about one or two before the workshop) to the rest of participants. *Have the used the "Big Ideas of Science"? Were they useful?* *Have they published ILSs?* *How are they activating in their school community, what did they do to engage their peers?* **13. Summative discussion – 30 min** Teachers invited to discuss/debate about the following questions: Will you continue using Go-Lab in your class? If yes, how? If no, why? If you could choose 2 things to improve in Go-Lab (including: Golabz, ILSs etc.) what would those be? What did you like most/least about Go-Lab? What was your favourite moment while using Go-Lab (either alone or with your students)? Did the use of Go-Lab contribute to your knowledge of IBSE? How? Has the use of Go-Lab helped you develop your ICT skills? If yes, please specify. Do you know if your school/local community/Ministry of Education is supporting the use of online laboratories via related trainings or other projects? **14. Evaluation – 10mn** Teachers fill in the WP6 usability questionnaire (online) http://tinyurl.com/golab-summative **15. Wrap up and final questions and answers (if any)– 5mn**

I.3 Cyprus

G O - L A B Event Code	CY09-08092016

Context: standalone event or combined with other ws, online or face to face	Online workshop/discussion (skype)
Country City/Region	Cyprus
Working language	Greek
Start/End Date	08/09/2016
Organizing Institute	University of Cyprus
Coordinator name and email	Zacharias Zacharia zach@ucy.ac.cy Nikoletta Xenofontos xenofontos.nikoletta@ucy.ac.cy Tasos Hovardas hovardas@ucy.ac.cy
Total number of teachers/schools	7 Go-Lab teachers
Brief description	An invitation for an online workshop was sent through email to all Go-Lab teachers in Cyprus, who were active in the previous school year. Seven of them were able to participate in an online discussion through skype. During the skype meeting, participants shared their experiences with Go-Lab, discussed about other related initiatives, and reported how important the support they had received from their school had been. After the exchange of their experiences, they were asked to discuss about Go-Lab in general, the features that they found more or less useful, recommendations for future improvements, the added value of the use of Go-Lab, and if they planned to continue using Go-Lab.
Group discussion/ reflection	
Experiences of Teachers with the Go-Lab	Insightful and satisfactory experience for teachers Easy to use by students Students were enthusiastic and satisfied with Go-Lab tools Go-Lab saves learning time Students acquire inquiry skills Each student can complete the learning tasks in his/her own speed Teachers have the opportunity to provide personalized feedback to students anytime needed

Teachers' activation in their school community/Support from peers and school administration	In some schools, a teacher must take the initiative to participate in projects, while in some other cases the school administration motivates teachers to participate. In both cases, the support from administration and peers is satisfying. The decision to participate in any analogous initiative is determined by the concern of teachers and the school administration for curriculum demands. A minority of teachers are usually involved in research projects and other initiatives, while most of them do not have the extra time needed to do so. The support from colleagues during the use of Go-Lab, especially from those who teach the Computer Science lesson, has proven proved valuable for the successful implementation.
Dissemination of learning material/Published ILSs	The possibility to publish an ILS in Go-Lab portal is considered as a very important opportunity to share effective teaching practices with teachers across nations. The learning material (e.g., ILSs) in Go-Lab portal is valid and easy to adapt. For someone not familiar with the Go-Lab portal, it might seem to be complex to use and/or create an ILS, however after learning how it works, it becomes quite easy.
Future use of Go-Lab	When something is in line with the curriculum and Go-Lab can add some value (e.g. in-depth understanding of concepts, acquisition of inquiry skills). For the introduction of difficult concepts (e.g. microcosm). Combination of Go-Lab with real experimentation for better understanding. However, this is something that depends on the context. The use of Go-Lab as homework is a very good option for students, in order to cover any gaps that might surface, in several subjects. In this direction, different groups of students can complete differentiated ILSs as homework. Barriers: lack of computers and slow internet connection
Most/Least like about Go-Lab	Most: Organization of several resources and simulations in a learning space. Everything that students need to do is included in an ILS. The quality of several apps that help students to acquire scientific skills. Students of different abilities can successfully complete an ILS in their own time. Introduction of experiments in class, that otherwise could not be done with real materials. Least: The successful use of Go-Lab in class depends on the internet connection. Sometimes the loading of the apps is slow and this is a disincentive for students. Of course, this is something that must be solved in each school separately. Having each student work in a computer is not always the best class arrangement. The Go-Lab must also support the collaboration of students. Of course, this can be manipulated by the teacher who can split the class in small groups.
Knowledge of IBSE	Inquiry learning is not included in the curriculum as a subject for teaching. However, teachers are free to integrate inquiry in their teaching practice. For some teachers the inquiry processes were unknown and the inquiry cycle framework proved to be very useful for them, in order to design an inquiry-based lesson.
ICT skills	All teachers had advanced ICT skills. They learned all new aspects on their own Go-Lab was very easy to use and it presented an incentive for teachers who wished to integrate new technologies in their teaching practice.

Use of online labs	In the curriculum of each subject, there are recommendations for the use of some simulations, however teachers use them optionally. Each school year the Ministry of Education, in collaboration with the Cyprus Pedagogical Institute, organize seminars and trainings for a variety of subjects. One of them is the use of ICT in teaching. There is no obligatory training for the use of online labs.
Reflection through questionnaire	Details will be sent separately.
Website	N/A
Photos or other relevant material	N/A
Event agenda	N/A

I.4 Estonia

G O - L A B Event Code	EEUTE211016
Context: standalone event or combined with other ws, online or face to face	Face to face
Country City/Region	Estonia
Working language	Estonian
Start/End Date	21/10/2016 – 22/10/2016
Organizing Institute	UTE
Coordinator name and email	Mario Mäeots mario.maeots@ut.ee
Total number of teachers/schools	16 teachers
Other stakeholders involved	-
Brief description	Workshop was organized as part of an in-service course for teachers who are interested in improving their Go-Lab related competences and in improving their knowledge about inquiry-based learning.
Facilitators Observations	Teachers are willing to share their knowledge about Golab with colleagues. They organized Golab sessions, e.g., for the members of Estonian biology teachers union. Some teachers share their (unpublished) ILSs with each other.

Theme analysis and reporting from implementation activities	Common themes and main questions that emerged while using Golab in science lessons: Students' motivations (how to increase students motivation); Inquiry skills (how to support and improve students inquiry skills); Estonian science curricula (how to find suitable topics to relate online labs or ILSs with science curricula); Digital competence (what kind of digital skills are needed for creating and using ILSs).
Group discussion/ reflection	Teachers reflected on the following points: Teachers really enjoyed having an opportunity to participate in Golab summer schools. This gave them a change for collaboration, sharing ideas and improving their inquiry and computer-related skills. ILSs helped to increase students learning motivation. Students are more motivated if they can use computers or even tablet computers. Latter was also valued as benefit that Golab gives a change to implement tablet computers in their lessons. Golab supports Estonian science curriculum but also it supports to improve teachers (and students) digital competences. The latter is one of the eight general competences that are expected in basic school and high school curricula. Here teachers said that creating ILSs supports very well skills for searching information and creating content that are part of digital competence. Golab ILSs are suitable for improving students' inquiry skills. Those how have created ILSs said that Golab allows creating ILSs that focus on only specific skill and thus, it helps support development of inquiry skills of individual students.
Experiences of Teachers with the Go-Lab activities	Most of the teachers used only online labs or readymade ILSs in their lessons. ILS creators were not so many, as it seemed for others bigger challenge.
Perceived Experiences / Influence of the Go-Lab Activities on Students	All ILSs created were also implemented.
Influence of Go-lab in the professional development of the teacher	Teachers are now more aware about possibilities: How to carry out diverse lessons. How to embed different online labs into their lessons. How to use apps for supporting students' inquiry skills. How to apply Inquiry Cycle in their lessons.
Expected Influence of the Go-Lab Activities on School Settings and Curriculum	In general Golab met teachers' expectations. The structure of the golabz portal is user friendly (although it is English) and it is quite easy to find all the labs and ILSs. Teachers highlighted that huge value of Golab is that the labs are in one place. Variety of labs allows preparing diverse lessons. Teachers said that diversity is important for teaching topics that are more complex (e.g., photosynthesis) and Golab gives that opportunity.
Challenges and Improvements of the Go-Lab model	Major challenges were related with bad internet connection (mostly WiFi) or general technical issues (apps slow loading time). Another challenge was related with the time. Teacher said that using Golab needs more planning and sometimes they do not find enough time for the Golab. Also, language issues needs still solving. Some translations are not suitable. Also instructions needs revising (under this comment was meant instructions that come together with online labs, e.g., PheT labs).
Reflection through questionnaire	ca 16

Website	-
Photos or other relevant material	  

Event agenda	**21/10/2016** Sharing experiences Chocolate challenge (inquiry-related activity) Group discussions Filling Questionnaires **22/10/2016** Hands-on activities with Graasp ILS creations Sharing ideas

I.5 Germany

I.6 Greece, Bulgaria and Romania

G O - L A B Event Code	GR02-110516
Context: standalone event or combined with other ws, online or face to face	Summative Workshop for science teachers, face to face
Country City/Region	Greece, Corfu
Working language	Greek
Start/End Date	11/05/2016
Organizing Institute	Ellinogermaniki Agogi
Coordinator name and email	Georgios Mavromanolakis gmavroma@ea.gr
Total number of teachers/schools	12 (from 8 schools)
Brief description	The event was organized in combination with the science contest for junior high school students “little crafts – great challenges”. The event was held in collaboration with the regional schools science center (EKFE) in Corfu island. The teachers accompanying the school teams and had experience using the Go-Lab in their classroom or for training fellow teachers reflected on their experiences and gave feedback.
Facilitators Observations	Participants discussed with the facilitator and interacted with each other expressing their views, their concerns, their experiences and their questions about various themes concerning Go-Lab initiative and approach, IBSE methodology, science curriculum reforms needed etc. They were given the questionnaires to fill in paper or online and the discussion centered on the main themes addressed in the questionnaires.
Theme analysis and reporting from	Themes raised in the discussion: The majority of teachers want to have a more flexible curriculum that gives them more freedom on how and what to teach. In general science teaching through inquiry needs a lot of preparatory work

implementation activities	They also expressed the view that the use of an online platform and the implementation of online activities in their classroom is in general a risky process. Further to that they find that the lack of up-to-date technical infrastructure in their schools (for example availability of high speed network connection) may be one of the main constrains to overcome in order to successfully implement such approaches in their everyday practice. In general they expressed the view that the Go-Lab approach and initiative are nice to engage students and that inquiry-based science teaching and learning is beneficial to students however the curriculum constraints with respect to time, flexibility and planning are significant constrains for most teachers. Other points raised during the discussions: The stages of inquiry process as proposed and structured are very helpful for both teachers and students. The process of going through an ILS and in the proposed steps/stages is motivating for students. However teachers fear whether they actually learn or just play through the labs and apps. The offered support materials, print and online guides, in Greek and in English are very helpful. Most agreed that any technical difficulty that may appear, such as slow network connection or long loading time of a lab or an ILS, is very obstructing for the class, especially for younger students. Many apps, labs and tools are difficult to understand how they work or how they can be set up properly and so there are not in common use or not useful at all. Traditional science teachers believe that many learning activities are more educational and useful when done as hands-on rather as online/virtual labs.
Group discussion/ reflection	Summarise as extensive as possible the participants' reflections according to the corresponding reflection points described in the Format and Guidelines document
Experiences of Teachers with the Go-Lab activities	The majority of teachers expressed overall positive views. They found that in general online lessons and educational resources are useful but difficult to implement in real school environments mainly due to the lack of appropriate technical infrastructure, e.g. pc's with fast internet connection. Additionally the standard school curriculum poses inflexible time constraints that are difficult to overcome
Perceived Experiences / Influence of the Go-Lab Activities on Students	The majority of teachers observed that the Go-Lab approach and other similar initiatives and in general IBSE is engaging for students
Expected Influence of the Go-Lab Activities on School Settings and Curriculum	The majority of teachers expressed the hope that similar initiatives if widespread will put further pressure for curriculum reforms that are needed to modernize science teaching and learning
Challenges and Improvements of the Go-Lab model	Availability of more resources and shorter lesson plans, preferably in Greek language. If the state or the educational authorities provide official accreditation of professional development to participant teachers then this will indirectly encourage more teachers to implement such approach in their everyday school teaching
Reflection through questionnaire	Teachers filled in the questionnaires in paper or online

G O - L A B Event Code	GR02-230616
Context: standalone event or combined with other ws, online or face to face	Summative Workshop for science teachers, face to face and online
Country City/Region	Greece, Pallini
Working language	Greek
Start/End Date	23/06/2016
Organizing Institute	Ellinogermaniki Agogi
Coordinator name and email	Georgios Mavromanolakis gmavroma@ea.gr
Total number of teachers/schools	About 20 (from 15 schools)
Brief description	The event was organized as an open invitation to science teachers and school advisors who had experience either with using the Go-Lab lesson plans or labs in their classroom or for training other teachers to discuss and to reflect on their experiences and to give feedback. It was also an opportunity to discuss the future use of the available resources beyond the end of the project.
Facilitators Observations	Participants discussed with the facilitator and interacted with each other expressing their views, their concerns, their experiences and their questions about various themes concerning Go-Lab initiative and approach, IBSE methodology, science curriculum reforms needed, common barriers to overcome, recommendation for sustainability etc. Participants on the whole freely interacted with each other and with the facilitator, expressing their views and their questions.
Theme analysis and reporting from implementation activities	Themes raised during the discussions: What topics to teach in which depth is prescribed in detail in the science curriculum. More flexibility and freedom in this front is needed. Science teaching through inquiry is time consuming. Most teachers need training to achieve the best results Online educational resources are attractive to students however their incorporation in everyday teaching is not possible due to technical constraints e.g. outdated infrastructure, or due to common teachers' fears or not enough confidence with new methodologies and practices. In general teachers find that inquiry-based science teaching and learning is beneficial to students. Nevertheless the most common curriculum constraints are with respect to time, flexibility and planning or preparation needed. Teachers in general find difficulties with formal assessment or with matching assessment to the ILS process Sharing materials with other teachers and schools had a positive impact and gave them a sense of recognition. The less experienced teachers found the support materials and guidebooks very useful and comprehensive.

	In general they had difficulties in familiarizing themselves with the authoring environment and all its aspects. When they get used to that they were eager to develop their own lesson plans, activities etc.
Group discussion/ reflection	Summarise as extensive as possible the participants' reflections according to the corresponding reflection points described in the Format and Guidelines document
Experiences of Teachers with the Go-Lab activities	Overall teachers had positive experiences. Some had technical difficulties which they overcome with persistence and support from the national coordinator
Perceived Experiences / Influence of the Go-Lab Activities on Students	IBSE is engaging and motivating for students. Online resources and interactive are more attractive to students
Expected Influence of the Go-Lab Activities on School Settings and Curriculum	More initiatives and projects are needed to renovate science education practices and curriculum.
Challenges and Improvements of the Go-Lab model	Availability of more resources and shorter lesson plans. More collaboration oriented assistive tools for teachers and students. More development/improvements needed in relation to assessment
Reflection through questionnaire	Teachers filled in the questionnaires in paper or online

G O - L A B Event Code	[P19-280916]
Context: standalone event or combined with other ws, online or face to face	Online Summative event
Country City/Region	Online
Working language	English
Start/End Date	29-09-2016
Organizing Institute	NUCLIO / EA
Coordinator name and email	Rosa Doran
Total number of teachers/schools	4 teachers

Brief description	This summative workshop took place via skype and representatives from different regions in Bulgaria participated. These participants accompanied Go-lab since early stages and successfully participated in training events, summer schools and contests. They also became Go-Lab ambassadors in their country/region
Facilitators Observations	The group was composed by 3 teachers and one teacher trainer. They were all very enthusiastic about Go-lab and hoping that the project and existing support will continue for many year. Their overall feeling was that they journey was just starting
Common themes identified in the discussion	Participants explained that the Go-lab training event in Sofia was a trigger to many important events in the country. Implementation of Go-lab in some of the schools provoked very interesting conversations in several schools and at this moment some collaborative projects among teachers of different discipline areas are taking shape\ Participants also reflected on the impact Go-lab had in their professional development and are hoping that new training events will come to Bulgaria All participants created their ILS but only 3 of them had the opportunity to implement. They have shared their work with other colleagues and started training them. They find Go-Lab a very user friendly tool that can support their professional development towards the use of more student centered models. Students felt a bit uneasy at the beginning but as they got more accostumed to the system they became excited about the possibility to have more classes were Go-Lab was used. They were concerned about the lack of ICT infracstructure and ICT support in their schools but were confident that they could find strategies to overcome this issues They appreciated the possibility to find so many online labs and apps and the freedom to integrate them in their own ILSs exploring the labs in so many different ways.
Recommendations made by participants	That further training is promoted in Bulgaria To have more material in Bulgarian
Website	n/a
Photos or other relevant material	n/a
Event agenda	n/a

G O - L A B Event Code	[P19-211016]
Context: standalone event or combined with other ws, online or face to face	Summative Event
Country City/Region	Face-2-face
Working language	English

Start/End Date	21-10-2016
Organizing Institute	NUCLIO / EA
Coordinator name and email	Rosa Doran
Total number of teachers/schools	7 teachers
Brief description	This summative workshop took place in a face-2-face event that took place in the Netherlands. These participants participated in some training events, summer schools and contests. They used a lot the support tools available in the portal
Facilitators Observations	The group was composed by 7 teachers. They were all very enthusiastic about Go-lab and hoping that the project and existing support will continue for many year. Their referred the need for further training in order to be able to fully explore the potential of Go-Lab
Common themes identified in the discussion	Implementation of Go-lab triggered collaboration between teachers in some of the schools that participated. All the teachers manifested their need for further training not only for the creation of ILSs but also for the use of inquiry methodology. They find Go-Lab a very user friendly tool that can support their professional development towards the use of more student centered models. Students enjoyed being exposed to the ILSs they prepared Lack of ICT infrastructure was a common problem among the participants All participants had good support from their headmasters They appreciated the possibility to find so many online labs and apps and the freedom to integrate them in their own ILSs exploring the labs in so many different ways. They have participated in the MOOC and referred that online training is fine for them.
Recommendations made by participants	That further training is promoted in Romania To have more material in Romanina and ready lessons adapted to their curricula.
Website	n/a
Photos or other relevant material	
Event agenda	

I.7 The Netherlands

G O - L A B Event Code	NLUT-270116
Context: standalone event or combined with other ws,	Workshop (given by Fer Coenders, Ellen Wassink-Kamp, Ton de Jong and Henny Leemkuil) in a conference for Science teachers

online or face to face	
Country City/Region	The Netherlands, Enschede
Working language	Dutch
Start/End Date	27/01/2016
Organizing Institute	University of Twente
Coordinator name and email	Henny Leemkuil, h.h.leemkuil@utwente.nl
Total number of teachers/schools	22 teachers
Brief description	The meeting started with an introduction about practicals and their effectiveness and te design of practicals. Thereafter golabz.eu was introduced. The participants explored the BOND or Splash lab and there was a discussion about the role these could play in lessons. After this they designed in small groups a practical that used this lab. After this Graasp was introduced and the participants had a look at an existing ILS “Slecht oplosbaar zout maken” (http://www.golabz.eu/spaces/slecht-oplosbaar-zout-maken-1). The workshop ended with a discussion about using digital and virtual labs and the usefulness of Golabz. All participants received a brochure with information about the Golab contest, The Golab MOOC and the latest Dutch newsletter.
Facilitators Observations	Participants were enthusiastic about using virtual labs, especially as a supplement to ‘hands-on’ practicals. Many of them thought they could be used for differentiation.
Theme analysis and reporting from implementation activities	The participants were not very good designers. Most of the designs were very traditional. Participants had difficulties with implementing the Inquiry approach. Some of the designs were too complicated and didn’t match with the possibilities of the Bond lab.
Group discussion/ reflection	
Experiences of Teachers with the Go-Lab activities	See above
Perceived Experiences / Influence of the Go-Lab Activities on Students	
Expected Influence of the Go-Lab Activities on School Settings and Curriculum	More possibilities to do experiments in the lessons (no chemical waste, safe environment).

Challenges and Improvements of the Go-Lab model	
Reflection through questionnaire	The link to the questionnaire was given to the participants, but it is unclear whether they filled in the questionnaire.
Website	https://www.utwente.nl/lerarenconferentie/programma/workshop-ronde-1/
Photos or other relevant material	 

G O - L A B Event Code	NLUT-180516
Context: standalone event or combined with other ws, online or face to face	Workshop (given by Fer Coenders and Henny Leemkuil) in a conference for teacher trainers

Country City/Region	The Netherlands, Utrecht
Working language	Dutch
Start/End Date	18/05/2016
Organizing Institute	University of Twente
Coordinator name and email	Henny Leemkuil, h.h.leemkuil@utwente.nl
Total number of teachers/schools	12 teacher trainers
Brief description	The meeting started with an introduction about practicals and their effectiveness and te design of practicals. Thereafter golabz.eu was introduced. The participants explored the BOND lab and there was a discussion about the role these could play in lessons. The workshop ended with a discussion about using digital and virtual labs and the usefulness of Golabz.
Facilitators Observations	
Theme analysis and reporting from implementation activities	
Group discussion/ reflection	In the discussion several issues were mentioned: • Put lab work in a context • Start with cookbook like experiments and then increase difficulty level • Give clear instructions • Make sure that there is a good connection with prior knowledge • Engage students in critical thinking about reliability/replicability • Lab work should lead to astonishment and curiosity
Experiences of Teachers with the Go-Lab activities	
Perceived Experiences / Influence of the Go-Lab Activities on Students	
Expected Influence of the Go-Lab Activities on School Settings and Curriculum	More possibilities to do experiments in the lessons (no chemical waste, safe environment).
Challenges and Improvements of the Go-Lab model	

Reflection through questionnaire	The link to the questionnaire was given to the participants, but it is unclear whether they filled in the questionnaire.
Website	http://www.fi.uu.nl/ecentelwier/
Photos or other relevant material	
Event agenda	(if applicable) Please copy here the agenda of the event (program of activities, etc.).

G O - L A B Event Code	[NL01-051016]
Context: standalone event or combined with other ws, online or face to face	Partly online, and partly by means of a face to face session at a school.
Country City/Region	The Netherlands
Working language	Dutch
Start/End Date	Last week of September and first week of October
Organizing Institute	University of Twente
Coordinator name and email	Henny Leemkuil, h.h.leemkuil@utwente.nl
Total number of teachers/schools	8 teachers
Other stakeholders involved	
Brief description	Discussion about the experiences with Go lab, reactions of students, suggestions for changes/improvements.
Facilitators Observations	All of the teachers were enthusiastic and will keep using Go lab. Most of them didn't use the tutoring platform.
Theme analysis and reporting from implementation activities	Students often needed more support than the teachers expected, especially young students. Some teachers decided to give a central presentation of the lab and apps before the students would use them individually. Some teachers didn't know how to implement labs and apps in Dutch. They thought that they were only available in English although in the description on the golabz site it was mentioned that there was a Dutch version. Some were not aware of the fact that it is possible to adapt the content of the apps.

	Having a more experienced teacher in the school who can support new users with the implementation of Go lab, helps a lot.
Group discussion/ reflection	
Experiences of Teachers with the Go-Lab activities	Half of the teachers made their own ILS. The others used existing material, be it an ILS made by somebody else or just a standalone lab. Some teachers mentioned that the loading time of the apps was long. Teachers mentioned that students often do not read carefully and just start to act. Some schools changed their policy to “Bring your own device”. Teachers find it difficult to figure out whether all materials, labs and apps will work properly on the different devices. They foresee problems. One person indicated that he didn’t like the fact that his material was only available in the cloud and that he doesn’t have a hard copy.
Perceived Experiences / Influence of the Go-Lab Activities on Students	Students liked the use of the materials because it was some different than what they usually do in class. They also liked the fact that they could use the materials at home. There are large differences between students. Some find their way easily, while others need a lot of support.
Influence of Go-lab in the professional development of the teacher	Some stated that they never made electronic learning materials and that they now have the idea that they can make a basic lesson. However they indicated that to make more advanced materials they need more time and support. Some hesitate to publish material on the golabz site because they feel uncertain about the quality of their work.
Expected Influence of the Go-Lab Activities on School Settings and Curriculum	The curriculum for science related subjects recently changed in the Netherlands. This year the first exams based on the new curriculum have been implemented. Teachers see some possibilities to fit in Go lab activities in the new curriculum because it is more problem based and focuses on the relationship between science and real life. But they need time to figure out where to fit in new materials. They indicated that they would implement things more easily if there was a direct connection with the book that they use.
Challenges and Improvements of the Go-Lab model	Teachers state that it takes a lot of time to figure out which labs and apps could be useful and to figure out how they work. The descriptions that are given on the golabz site are limited and could be more helpful. Also some labs do not contain any instructions on their usage.
Reflection through questionnaire	The participants said that they would fill in the questionnaire.
Website	-
Photos or other relevant material	-
Event agenda	

I.8 Portugal

G O - L A B Event Code	PT19-01102016
Context: standalone event or	Summative Workshop for Go-lab Pilot Teachers

combined with other ws, online or face to face	
Country City/Region	Portugal, National
Working language	Portuguese
Start/End Date	October 2016
Organizing Institute	NUCLIO
Coordinator name and email	ROSA DORAN rosa.doran@nuclio.pt
Total number of teachers/schools	30 teachers (from 18 schools)
Brief description	Teachers that participated in the Go-lab project where invited to participate in an event that intended to collect their views on their participation in the project and also reflect on possible uses that can ensure sustainability for its integration in classroom practices after the end of the project.
Facilitators Observations	The session had components of reflection, sharing of good practices and success stories and ended with a simulation of a possible integration of the project in the new changes being put in place by the new ministry of education.
Theme analysis and reporting from implementation activities	**The overall Go-lab experience** Some of the participant teachers already had some experience on the use of IBL but many didn't . Go-lab was an opportunity to practice and improve their knowledge on the use of this methodology. It was referred by many participants that the system evolved nicely and became more user friendly. Issues related to lack of computers or weak internet connection were behind the major impediments for the broader uptake of the use of Go-lab. Time constrain and lack of already existing ILSs targeting curriculum content was also mentioned as a short come for its use. In overall teachers were very pleased with the possibility to use Go-lab tools and resources and the group seemed to have a variety of types of use ranging from the ones exploring the repository of labs (the only repository they know so far that present online labs in such a complete and useful way), to the ones creating complete lessons addressing several topics of the curriculum.
Group discussion/ reflection	Summarize as extensive as possible the participants' reflections according to the corresponding reflection points described in the Format and Guidelines document
Experiences of Teachers with the Go-Lab activities	The possibility to integrate Go-lab in the future classroom lab was presented during this session and the possibility of using Go-lab for a multidisciplinary approach was warmly welcomed. Teachers shared their use of Go-lab and how they engaged other colleagues in their school and school cluster. Many of the pilot teachers successfully trained other teachers.
Perceived Experiences / Influence of the Go-Lab	Attitude of students ranged from excitement with the use of the platform and the freedom to experiment to worries about feeling insecure with the new method and frustration for feeling that this required much more work and carried much more responsibility.

Activities on Students	
Expected Influence of the Go-Lab Activities on School Settings and Curriculum	Many teachers successfully managed to promote Go-lab in the framework of their regular classrooms which presented an extra degree of freedom. In general there were no major uptake in schools due to the system in practice that was up to last school year strongly supporting the traditional teaching.
Challenges and Improvements of the Go-Lab model	ICT structure and support remains as a main challenge for the implementation of Go-lab.
Reflection through questionnaire	Teachers were asked to fill the online questionnaires.

I.9 Spain

G O - L A B Event Code	SP12-09/06/16
Context: standalone event or combined with other ws, online or face to face	Standalone.
Country City/Region	Spain/Barcelona
Working language	Spanish
Start/End Date	09/06/2016
Organizing Institute	CESIRE
Coordinator name and email	Jordi Regales, jregales@xtec.cat
Total number of teachers/schools	17 secondary schools teachers (Barcelona and region)
Brief description	The workshop was only for the “summative” objective, although the workshop was started with introducing the new features of Go-Lab. After this presentation we opened a discussion about the Go-Lab: advantages, experiences in the classroom, problems, teachers & students’ needs, etc. At the end the attendants completed the provided questionnaires.
Facilitators Observations	The level of interaction with the attendants was high. The majority of them knew perfectly the GoLab project, although few of them were “freshman”. The majority of the attendants were teachers as well as the couple of pre-service science teachers studying master level.

	The ambient was good, and from the beginning teachers interact with the presenter. NOTE: this is the fourth Go-Lab session in Barcelona.
Common themes identified in the discussion	ILS as Inquiry –based learning tool Graasp – authoring tool Apps in classroom Virtual and Remote Laboratories implementation in classroom Searching Feature in the Go-Lab portal Tutoring and support in the Go-Lab project
Examples illustrating common themes	Teachers explained some their activities in their classrooms. They highlighted that the experience has been successful, especially for the students. Students like the ILS, because this was a different activity in the classroom. They like to be responsible for the scientific experience. At the same time other students mentioned that they felt alone and uncomfortable because it was not clear their tasks. Discussion was also about the inquiry process, the "scaffolding", big ideas of science, searching tool, how many support did the students need? We discovered that some teachers did not use the apps for the evaluation: upload, report, etc. since they were not sure that the platform was going to run properly, but they need to be sure to have a final report written by the students. In general, the teachers appreciate the online labs. They appreciate a lot to have all of them in a portal: the only that they have to do was to choose the most adequate to the task. The searching tool should be improved. In order to figure out if the ILS existed fits to the teaching objectives, teacher needs to open every ILS and check the info inside. They liked to have a big amount of ILSs, but they wanted to discover "his ILS" asap. The same situation was described for the labs. Some labs were not easy to apply, by the teachers. They need more help and extensive tutorials. The majority of the teachers preferred to work with virtual lab, but some of them used remote labs and they are satisfied with their experience. ILS: Teachers used different approaches from adapt an existing one to develop from the scratch. The tutorial provided by Go-Lab is helpful. The one can design her ILS easily employing it. The best feature of the GoLab is the inquiry process, the methodology inside it, because it helps them to think about the scientific process. There is no uniform opinion about the authoring tool – graasp: from hard to use, and unstable to easy and intuitive. The teachers who involved in the project from very beginning mentioned that the graasp improved a lot and the new version of graasp is much more stable. But really they said that it was amazing to create a powerful online lessons chunk in a short period of time, including videos, pictures, apps, labs, and so on. Teachers appreciate the support of Go-Lab Spain National team. It was a nice experience to work with hypothesis tool. Also it was interesting to insert terms of the experience into the hypothesis tool to help the students with the process of writing hypothesis.
Recommendations made by participants	The most important recommendation to keep the Go-Lab platform running and available for the teachers. They want to continue to apply apps, labs, ILSs in a classroom and It was articulated concern about the availability the instrument next year.
Website	(if applicable) The URL of the website that has been set up for this activity. http://www.interempresas.net/Tecnologia-aulas/Articulos/156985-Cesire-organiza-seminario-sobre-Proyecto-GoLab-dirigido-a-profesores-de-Secundaria.html

	https://aplicacions.ensenyament.gencat.cat/pls/soloas/pk_for_mod_ins.p_for_detall_activitat?p_header=Llista%20d%27activitats%5Epk_for_mod_ins.p_for_cons_activitats?p_tipus_act=FCTM%26p_any=2015-2016%26p_totes=S%26p_inici=1%26p_excloure_crp_rec=T&p_codi=9000800532&p_curs=2015-2016&p_excloure_crp_rec=T
Photos or other relevant material	**Picture 1: The organizers with the presenter**  **Picture 2: Some attendants**  **Picture 3. Silvia participating in the discussion**

	 **Picture 4. Filling the questionnaires** 
Event agenda	Go-Lab: graasp, apps, online experiments, learning analytics, new features and services of graasp and Go-Lab Go-Lab results for teachers: inquiry, using resources already created by other teachers and methods to bring activity to the classroom successfully. Go-Lab Activity in Spain from point of view of Catalan teachers. Sustainability of the project in the future. Collection of opinions over the questionnaires.

G O - L A B Event Code	SP12-20706/16
Context: standalone event or combined with other ws,	Standalone. Online.

online or face to face	
Country City/Region	Spain/Online (Bilbao)
Working language	Spanish
Start/End Date	20th June 2016, 20/06/2016 From 17:30 to 19:00
Organizing Institute	University of Deusto
Coordinator name and email	Javier García-Zubía, zubia@deusto.es
Total number of teachers/schools	5
Brief description	The event was starting by describing the experience of each teacher with Go-Lab. After this each teacher provided feedback with their comments and suggestions with a broad conversation between them. NOTE: Although the virtual conference tool allows building online discussion it is difficult to manage such communication if we compare with our f2f experience. Some technical problems appeared with internet connection as well.
Facilitators Observations	All teachers participated, have involved in the Go-Lab project and moreover, have designed one or more ILSs. Also their students have filled the questionnaire provided by Go-Lab consortium. A part of the meeting was devoted to describe some problems appeared during implementation the Go-Lab tools. During the session Carmen was helping Pablo to solve his problem with the virtual lab. The fruitful communication was built.
Common themes identified in the discussion	Most teachers used the Go-Lab in different approaches. For example, Carmen used the Go-Lab to train teachers how to work collaboratively on the design ILS for STEM curricular. Wilme applied Go-Lab (a best practice) to teach students to web development using temporarily web technology in a Vocational Training School. The main instrument that they have used is http://graasp.eu. Pablo is teacher in a school that offers the “International Course”to the students. He teaches English implementing Go-Lab in classroom. This approach was also applied by Isabel in primary school, Bilbao.
Examples illustrating common themes	
Recommendations made by participants	The comments provided by teachers are listed below: It is very important the experiment (in general) in the classroom, without restrictions using a virtual (or remote) lab. The teachers connect the creation with experimentation. Carmen teaches Science and Scientific Culture in different levels and with students with different levels and attitudes. She has used the same lab for different groups of such students. She said that students were excited with labs and the tasks. It was amazing to see their behavior in the classroom. Teachers appreciate the Graasp as a powerful tool to design innovative and creative lessons. Two teachers indicated that they do not have enough bandwidth in their schools, but the other teachers said that they had enough bandwidth.

	Even having more than 300 labsin Go-Lab repository, teachers indicated that still they need more labs to implement ILS. Especially they would like to have more labs in technology (informatics, electronics design), and not “only” in science. (Wilme). It was very important access to virtual and remote labs for making experiences. These experiences would be impossible for them without Go-Lab (Pilar) The Go-Lab forces the students in an individual task. They had to discover by their own. (Pilar) Sometimes it is hard to work with real remote labs but it is exciting. (Pilar) It is important for teachers to control the activity of the students using Angela for learning analytics. This must be organized since the beginning. (Pilar) It could be useful to give the students the impression that they are also innovating with Go-Lab. Go-Lab gives certificates or recognition to teachers, but this could be done for students also.(Pilar) Although the first impression of Go-Lab (http://golabz.eu) that it is easy to use for a novice or a freshman ILS designer, it could be useful to highlight that Go-Lab (http://golabz.eu) offers numerous tutorials and it is easy to use, etc. In this case the first impression could be even more comfortable for a novice.(Pilar) It is recommended to offer some recognition to the teachers: “training certificates”(Pilar) Teachers used the Go-Lab project as the level of pedagogical and technological innovation in their schools. During open doors (info days) in the school session Pilar presented the radioactivity lab incorporated in Go-Lab ILS environment. Wilme has disseminated his work with students with different channels: web, journal, conferences… Pablo appreciated the pedagogical methodology. He said that this common approach in five phases helps the student to see what the scientific method is. This approach reinforces the scientific method. Some labs help the students with processes step by step. E.g., a biology lab is to explore the acidification of the oceans.(Pablo) Students have problems to identify different variables: dependent, independent and controllable. He suggests help the students with this process using tables (e.g., more apps) or…… He remarks that this is very important to construct correct hypothesis, and even more to obtain hypothesis that can be experimented in the online lab. Otherwise the process is not useful for the student.(Pablo) It would be a good idea to share the data of the experiment between different institutions using google drive or similar. In this case the final activity would be to analyze the different results. He would like to use the Go-Lab to reinforce the relation with other schools, especially with other international schools.(Pablo) The main final recommendation was about the searching system in Go-Lab (http://golabz.eu). The teachers need more and clear information about what and how are the ILS included. They said that in general they needed to open each ILS recommended to see if it was useful for them or not. Now in golabz repository there are more than 300 ILS and more than 300 labs. (All participants) All the meeting attendants are worried with the sustainability of the Go-Lab platform (golabz.eu & graasp.eu) They want to use the GoLab project next year.
Website	We use the BB collaborative tool
Photos or other relevant material	https://eu1.bbcollab.com/p.jnlp?psid=2016-06-20.1727.M.30A09B856BD57B635181C016E33748.vcr&sid=2013060
Event agenda	There was not any agenda. It was an open discussion.

Annex II to the "Report on Implementation Activities Phase-C"

Table 1: List of implementation activities with teachers and with students organized by national coordinators and partners during Phase-C

Country	Partner(s)	Date(s)	Type	Participants (Schools)	Labs	Subject(s)
Austria	CUAS	17/03/2016	Training of teachers	3 (3)	Radioactivity, Splash, electricity lab, Acid-Base	Physics, Informatics
Austria	CUAS	02/05/2016	Training of teachers	1 (1)	Radioactivity, Gearsketch, electricity lab	Informatics
Austria	CUAS	03/05/2016	Training of teachers	1 (1)	Radioactivity, Robotic arm, electricity lab	Informatics, Technology
Austria	CUAS	24/05/2016	Training of teachers	1 (1)	Radioactivity, Black body radiation, Gearsketch	Informatics, Technology
Austria	CUAS	31/05/2016	Training of teachers	1 (1)	Radioactivity, VISIR, electricity lab	Informatics
Cyprus	UCY	13/10/2015 - 22/10/2015	Activity with students	73 (1)	Splash	Physics
Cyprus	UCY	27/11/2015 - 09/12/2015	Activity with students	70 (1)	Electricity lab	Physics
Cyprus	UCY	04/12/2015	Activity with students	20 (1)	Electricity lab, Splash, Craters	Physics, Technology
Cyprus	UCY	13/02/2016	Activity with students	43 (1)	Electricity lab	Physics
Cyprus	UCY	25/02/2016- 26/02/2016	Activity with students	16 (1)	Electricity lab	Physics
Cyprus	UCY	06/09/2016	Training of teachers	19 (19)	Electricity lab	Physics
Estonia	UTE	08/10/2015	Activity with students	22 (1)	Splash	Physics
Estonia	UTE	28/10/2015	Activity with students	22 (1)	Acid-Base	Chemistry
Estonia	UTE	10/11/2015	Activity with students	20 (1)	Splash	Physics
Estonia	UTE	11/11/2015	Activity with students	24 (1)	Acid-Base	Chemistry
Estonia	UTE	20/11/2015	Activity with students	25 (1)	Guppies	Biology
Germany	UDE	18/11/2015	Training of teachers	4 (4)	Archimedes, Osmosis, electricity lab, Cryptography	Physics, Chemistry, Technology, Informatics
Germany	UDE	03/05/2016	Training of teachers	4 (4)	Archimedes, Osmosis, Remote Microscope, Fishbowl, Cryptography	Physics, Chemistry, Biology, Informatics

Country	Partner(s)	Date(s)	Type	Participants (Schools)	Labs	Subject(s)
Greece	EA	23/11/2015	Training of teachers	16 (12)	Phet, Geogebra, Impact, ESA-SOHO, electricity lab	Physics, Informatics, Technology
Greece	EA	01/02/2016 15/02/2016	Activity with students	16 (1)	iSpyCMS	Physics, Technology
Greece	EA	23/02/2016 20/04/2016	Training of teachers	27 (20)	Phet, Geogebra, Impact, ESA-SOHO, electricity lab	Physics, Informatics, Technology
Greece	EA	15/03/2016	Activity with students	21 (1)	iSpyCMS	Physics, Technology
Greece	EA	04/04/2016-12/04/2016	Activity with students	175 (1)	Geogebra	Physics, Maths, Astronomy
Greece	EA	19/05/2016-23/05/2016	Activity with students	40 (1)	Geogebra	Physics, Maths, Astronomy
Greece	EA	19/04/2016-11/05/2016	Activity with students	30 (10)	Phet, Splash, Archimedes	Physics, Technology
Greece	EA(organizer), EPFL, NUCLIO, IMC	03/07/2016-08/07/2016	International Training of teachers	36 (36)	Phet, Geogebra, Impact, Splash, etc	Physics, Astronomy, Chemistry, Biology
Greece	IASA, EA	17/12/2015	Activity with students	30 (2)	Hypatia	Physics
Greece	IASA	09/03/2016	Activity with students	60 (12)	Hypatia	Physics
Greece	IASA	19/03/2016	Activity with students	100 (20)	Hypatia	Physics
Greece	IASA	11/05/2016	Activity with students	25 (1)	Hypatia	Physics
Greece	IASA	20/04/2016	Activity with students	30 (10)	Hypatia	Physics
Greece	IASA	30/06/2016	Activity with students	45 (5)	Hypatia	Physics
The Netherlands	UT, UCY, UTE	16/11/2015	Activity with students	168 (6)	Splash	Physics
The Netherlands	UT	16/01/2016	Activity with students	167 (3)	Splash	Physics
The Netherlands	UT	01/02/2016	Activity with students	29 (1)	Phet	Chemistry
The Netherlands	UT	02/02/2016	Activity with students	54	Various	Various
The Netherlands	UT	16/04/2016	Activity with students	53 (1)	Splash	Physics
The Netherlands	UT	01/05/2016	Activity with students	183 (1)	Phet	Physics
The Netherlands	UT	16/05/2016	Activity with students	22 (1)	Electricity lab	Physics
Portugal	NUCLIO	24/10/2015	Training of teachers	15 (12)	SalsaJ, Sun4all,	Physics, Astronomy

Country	Partner(s)	Date(s)	Type	Participants (Schools)	Labs	Subject(s)
					Faulkes Telescope	
Portugal	NUCLIO	19/10/2015-23/10/2015	Training of teachers	10 (6)	SalsaJ, Sun4all, Faulkes Telescope	Physics, Astronomy
Portugal	NUCLIO	28/01/2016 18/02/2016	Training of teachers	15 (10)	SalsaJ, Sun4all, Faulkes Telescope	Physics, Astronomy
Portugal	NUCLIO	15/01/2016	Activity with students	20 (1)	SalsaJ, Sun4all, Faulkes Telescope	Physics, Astronomy
Portugal	NUCLIO	16/02/2016	Activity with students	30 (2)	SalsaJ, Sun4all, Faulkes Telescope	Physics, Astronomy
Portugal	NUCLIO	29/02/2016	Activity with students	30 (1)	SalsaJ, Sun4all, Faulkes Telescope	Physics, Astronomy
Portugal	NUCLIO	05/02/2016-10/02/2016	Training of teachers	16 (9)	SalsaJ, Sun4all, Faulkes Telescope	Physics, Astronomy
Portugal	NUCLIO	17/02/2016 27/02/2016 02/03/2016 050/3/2016	Training of teachers	15 (10)	SalsaJ, Sun4all, Faulkes Telescope	Physics, Astronomy
Portugal	NUCLIO	18/03/2016	Activity with students	40 (1)	Electricity lab	Physics
Portugal	NUCLIO	01/03/2016	Activity with students	30 (1)	SalsaJ, Faulkes Telescope	Physics, Astronomy
Portugal	NUCLIO	13/03/2016	Activity with students	6 (1)	SalsaJ, Faulkes Telescope	Physics, Astronomy
Spain	UDEUSTO	09/09/2015-20/06/2016	Training of teachers	70 (50)	Archimedes, Splash	Physics
Spain	UDEUSTO	14/01/2016-18/02/2016	Training of teachers	14 (10)	Various	Various
Spain	UDEUSTO	16/05/2016	Activity with students	37 (1)	Phet	Physics
Spain	UDEUSTO	17/05/2016	Activity with students	25 (1)	Phet	Physics
Spain	UDEUSTO	18/05/2016	Activity with students	25 (1)	Phet	Physics
Spain	UDEUSTO	20/05/2016	Activity with students	25 (1)	Phet	Physics
UK	CU	25/04/2016	Training of teachers	6 (1)	SalsaJ, Impact, Faulkes Telescope	Physics, Astronomy
UK	CU	14/06/2016	Training of teachers	12 (5)	SalsaJ, Impact, Faulkes Telescope	Physics, Astronomy

Country	Partner(s)	Date(s)	Type	Participants (Schools)	Labs	Subject(s)
UK	CU	20/06/2016	Training of teachers	15 (7)	SalsaJ, Impact, Faulkes Telescope	Physics, Astronomy
UK	CU	12/07/2016	Training of teachers	12 (5)	SalsaJ, Impact, Faulkes Telescope	Physics, Astronomy
Hawaii	NUCLIO	03/08/2015-08/08/2015	Training of teachers	20 (10)	SalsaJ, Sun4all, Faulkes Telescope	Physics, Astronomy
The Netherlands	NUCLIO, CU, ESA	23/11/2015-27/11/2015	International Training of teachers	20 (20)	SalsaJ, Impact, Faulkes Telescope, SOHO-ESA	Physics, Astronomy
Romania	NUCLIO, EA	10/12/2015-13/13/2015	Training of teachers	20 (15)	SalsaJ, Impact, Faulkes Telescope	Physics, Astronomy
Belgium	EUN	3/2/2016 - 15/2/2016	International Training of teachers	25(25)	Various	Various
Poland	NUCLIO	11/04/2016-13/04/2016	Training of teachers	20 (15)	SalsaJ, Impact, Faulkes Telescope	Physics, Astronomy
Colombia	NUCLIO	10/05/2016-22/06/2016	Training of teachers	60 (40)	SalsaJ, Impact, Faulkes Telescope	Physics, Astronomy
France	EUN	27/05/2016-10/06/2016	Activity with students	18 (1)	Greenhouse	Chemistry, Environmental sciences
Serbia	NUCLIO	29/05/2016-05/06/2016	Training of teachers	65 (30)	SalsaJ, Impact, Faulkes Telescope	Physics, Astronomy

Table 2: Summative and per country number of teachers, students and schools that participated in implementation activities organized by national coordinators and partners in Phases C, B, A and in total.

	Austria	Belgium	Cyprus	Estonia	Germany	Greece	Netherlands	Portugal	Spain	UK	Other	Total
PHASE-C												
Teachers participated in Go-Lab Trainings	7	0	19	0	8	79	0	71	84	45	205	**518**
Students participated in Go-Lab Activities	0	0	222	133	0	572	676	156	112	0	18	**1889**
Schools participated in Go-Lab Trainings	7	0	19	0	8	68	0	47	60	18	130	**357**
Schools participated in Go-Lab Student Activities	0	0	5	6	0	64	14	7	4	0	1	**101**

	Austria	Belgium	Cyprus	Estonia	Germany	Greece	Netherlands	Portugal	Spain	UK	Other	Total
PHASE-B												
Teachers participated in Go-Lab Trainings	0	85	64	10	54	99	10	306	147	15	4	**794**
Students participated in Go-Lab Activities	80	0	178	208	0	471	338	510	0	0	49	**1834**
Schools participated in Go-Lab Trainings	0	55	20	5	24	68	5	62	92	8	1	**340**
Schools participated in Go-Lab Student Activities	5	0	9	4	0	54	4	3	0	0	1	**80**
PHASE-A												
Teachers participated in Go-Lab Trainings	22	73	2	4	2	85	10	75	49	30	38	**380**
Students participated in Go-Lab Activities	52	0	0	0	0	278	230	0	0	0	0	**560**
Schools participated in Go-Lab Trainings	16	57	2	2	2	77	5	71	49	30	38	**344**
Schools participated in Go-Lab Student Activities	4	0	0	0	0	29	4	0	0	0	0	**37**
TOTAL AFTER PHASES A+B+C												
Teachers participated in Go-Lab Trainings	29	158	85	14	64	263	20	452	280	90	247	**1692**
Students participated in Go-Lab Activities	132	0	400	341	0	1321	1244	666	112	0	67	**4283**
Schools participated in Go-Lab Trainings	23	112	41	7	34	213	10	180	201	56	169	**1041**
Schools participated in Go-Lab Student Activities	9	0	14	10	0	147	22	10	4	0	2	**218**

II.1 Austria

G O - L A B Report Code	[AT13-170316]
Title	Future job [campus] Speed Dating
Country City/Region	Villach
Working language	German

Start/End Date	10:30 – 13:00 17/03/2016
Partners Involved	Secondary schools from Villach, AMS,AK, Beruf- und Bildungsorientierung Kärnten
Coordinator name and email	Danilo Garbi Zutin [D.GarbiZutin@fh-kaernten.at] Christian Kreiter [C.Kreiter@fh-kaernten.at]
School Profile	Technical schools with bilingual teaching programs and profiles like mathematics, physics, chemistry, biology and informatics (oriented to science)
Number of teachers	3 teachers with focus on physics, mathematics and informatics
Activity Description	During the campus site event teachers were able to get information about the Go-Lab project while their students were taken care of in different activities. The main goal was to find out if teachers already had contact with Online labs and to show them the possible application in their classes. We spend about 30 minutes per teacher. In this time we demonstrated The Golab project and its goals The Golabz repository Various Online labs and ILS' And the Graasp framework. The teachers showed interest and were impressed by the variety of existing labs. However, all teachers also pointed out that they are uncertain whether or not to create their own ILS'. Teachers said that the main reason for their concern is the high workload they already face, because the final exams in Austria are going to be centralized for the very first time.
Implemented online labs	Used labs: Electrical circuit lab Radioactivity Splash Archimedes' Principle Acid-Base solution GearSketch
Learning outcomes	Teachers' reaction was positive on the possibilities Online labs can offer for their lessons. They showed interest in searching for labs in the Golabz repository on their own to find a lab that fits their curricula.
Photos or other relevant material	

G O - L A B Report Code	[AT13-020516]

Title	Online Teacher Workshop for the Citizen Science Award
Country City/Region	Online (Austria)
Working language	German
Start/End Date	14:00 – 15:00 02/05/2016
Partners Involved	Secondary school (NMS Clemens Holzmeister Landeck) from Tirol, Austria
Coordinator name and email	Christian Kreiter [C.Kreiter@fh-kaernten.at] Danilo Garbi Zutin [D.GarbiZutin@fh-kaernten.at]
School Profile	Secondary school with Informatics classes
Number of teachers	1 teacher
Activity Description	We are holding a contest for interested teachers with the goal to create and implement ILS' in German. This workshop activity has the goal to Give teachers an overview of the Go-Lab project Show them Online labs and how they work Give an example of an ILS and the inquiry learning approach and To give a demonstration how to use Graasp. Due to the distance between our institution and the school we made the workshop online via Adobe Connect. The participating teacher works in a so-called New Middle School (NMS), where the students are generally between 10 and 14 years old. His subject fields are physics, mathematics and informatics.
Implemented online labs	Used labs: Electrical circuit lab Radioactivity GearSketch
Learning outcomes	The participating teacher had no problems to understand the Graasp framework. He mentioned that he wants to have especially a look on Online Labs which are in the mathematics subject field since most of his working time is spend in this subject.

G O - L A B Report Code	[AT13-030516]
Title	Online Teacher Workshop for the Citizen Science Award
Country City/Region	Online (Austria)
Working language	German
Start/End Date	14:00 – 15:00 03/05/2016

Partners Involved	Secondary school (HTL Wolfsberg) from Carinthia, Austria
Coordinator name and email	Christian Kreiter [C.Kreiter@fh-kaernten.at] Danilo Garbi Zutin [D.GarbiZutin@fh-kaernten.at]
School Profile	Secondary school with focus on mechanical engineering and informatics
Number of teachers	1 teacher
Activity Description	We are holding a contest for interested teachers with the goal to create and implement ILS' in German. This workshop activity has the goal to Give teachers an overview of the Go-Lab project Show them Online labs and how they work Give an example of an ILS and the inquiry learning approach and To give a demonstration how to use Graasp. The workshop was initially planned for 02/05. However, because of technical issues with Adobe Connect the meeting was rescheduled to the next day and Skype was used instead. The participating teacher works in a higher technical school with focus on mechanical engineering and informatics. Students at this school are between 14 and 19 years old. His main subject field is robotics.
Implemented online labs	Used labs: Electrical circuit lab Robotic Arm laboratory Radioactivity
Learning outcomes	The participating teacher had no problems to understand the Graasp framework. Since only one teacher was participating the workshop was very informal. The teacher plans to use an Online lab from his school. Thus, we showed how to implement a web client as an app with the App-Composer.

G O - L A B Report Code	[AT13-240516]
Title	Online Teacher Workshop for the Citizen Science Award
Country City/Region	HTL Villach in Villach, Carinthia, Austria
Working language	German
Start/End Date	14:00 – 16:00 24/05/2016
Partners Involved	Secondary school (HTL Villach) from Carinthia, Austria
Coordinator name and email	Christian Kreiter [C.Kreiter@fh-kaernten.at]
School Profile	Secondary school with focus on architectural engineering, civil engineering and informatics

Number of teachers	1 teacher
Activity Description	We are holding a contest for interested teachers with the goal to create and implement ILS' in German. This workshop activity has the goal to Give teachers an overview of the Go-Lab project Show them Online labs and how they work Give an example of an ILS and the inquiry learning approach and To give a demonstration how to use Graasp. The workshop was held at the school of the participating teacher. Because of the informal nature the teacher was directly able to start a new ILS on his notebook and features of Graasp were directly demonstrated there. The participating teacher works in a higher technical school with focus on architectural engineering, civil engineering and informatics. Students at this school are between 14 and 19 years old. His main subject field is informatics.
Implemented online labs	Used labs: Blackbody Radiation Lab GearSketch Radioactivity
Learning outcomes	The participating teacher showed a lot of interest and could follow explanations of the Graasp framework easily. The school of said teacher created a remote laboratory within another project which is used to measure the bending moment of an exchangeable construction material like wood or steel. Thus, we demonstrated how a web client of a lab can be implemented as app with the App-Composer.

G O - L A B Report Code	[AT13-310516]
Title	Online Teacher Workshop for the Citizen Science Award
Country City/Region	Online (Austria)
Working language	German
Start/End Date	15:00 – 16:30 31/05/2016
Partners Involved	Secondary school (Neue Mittelschule Zirl) from Tirol, Austria
Coordinator name and email	Christian Kreiter [C.Kreiter@fh-kaernten.at]
School Profile	Secondary school with Informatics classes
Number of teachers	1 teacher
Activity Description	We are holding a contest for interested teachers with the goal to create and implement ILS' in German. This workshop activity has the goal to • Give teachers an overview of the Go-Lab project • Show them Online labs and how they work

	• Give an example of an ILS and the inquiry learning approach and • To give a demonstration how to use Graasp. Due to the distance between our institution and the school we made the workshop online via Adobe Connect. The participating teacher works in a so-called New Middle School (NMS), where the students are generally between 10 and 14 years old. His subject fields are physics, chemistry, mathematics, informatics and crafting.
Implemented online labs	Used labs: • Electrical circuit lab • VISIR • Radioactivity
Learning outcomes	The participating teacher had no problems to understand the Graasp framework. He learned the most important features on how to create and publish an ILS.

II.2 Cyprus

G O - L A B Event Code	CY09-OCT2015
Title	ILS implementation: Sinking and floating (in Greek)
Country City/Region	Cyprus, Nicosia
Working language	Greek
Start/End Date	13/10/2015 – 22/10/2015
Organizing Institute	University of Cyprus
Coordinator name and email	Zacharias Zacharia zach@ucy.ac.cy Nikoletta Xenofontos xenofotnos.nikoletta@ucy.ac.cy Anna Fiakkou fiakkou.anna@ucy.ac.cy Tasos Hovardas hovardas@ucy.ac.cy
Activity Form	In-school activity
Activity Type	Implementation activity
School profile	Gymnasio Pera Chorio Nisou is a public regional high school in Nicosia, Cyprus. “Περιφερειακό Γυμνάσιο Πέρα Χωρίου Νήσου”: http://gym-pera-chorio-nisou-lef.schools.ac.cy/
Total number of teachers/schools	73 secondary students (14-15 years old, 24 boys and 39 girls)
Implemented online labs	Sinking and floating ILS (in Greek): http://graasp.eu/ils/560a2798b8fd4d2280c740bc/?lang=el

Brief description	The main purpose of the implementation was the evaluation of the impact of the Hypothesis Scratchpad tool included in the ILS. Specifically, three configurations of the Hypothesis Scratchpad tool were examined. In the first configuration the students were provided with all the variables and conditionals needed for their hypotheses formulation, in the second configuration they were provided with fewer variables and conditionals and in the third configuration they didn't have any variables or conditionals. Data from pre- and post- tests were collected and analyzed. In addition, screen-captured data were used for further investigation, concerning the hypotheses that students formulated and their actions, overall. The participants in this study were recruited from three classes, in which the physics teacher was the same. The implementation lasted three meetings for each class. In the first meeting, students completed pre-tests (knowledge test and inquiry skills test), in the second meeting they performed the activities of the ILS and in the last meeting they completed post-tests. The first and third meetings lasted approximately 40 minutes, while the second meeting lasted approximately 80 minutes.
Learning outcomes	Students in each class were able to use the Hypothesis Scratchpad tool and they formulated at least two hypotheses. The impact of the three different configurations of the Hypothesis Scratchpad tool differed only in terms of specific dimensions of knowledge and inquiry skills. Specifically, students who used the Hypothesis Scratchpad with all variables and conditionals, outperformed other students in terms of their improvement in "Stating Hypothesis" (inquiry skill dimension), while students who were not provided with any variables or conditionals for formulating hypotheses scored higher in the "Apply" level of the knowledge test.
Photos or other relevant material	 

G O - L A B Event Code	CY09-NOV&DEC2015
Title	ILS implementation: Electric Circuits (in Greek)
Country City/Region	Cyprus, Nicosia
Working language	Greek
Start/End Date	27/11/2015 – 09/12/2015
Organizing Institute	University of Cyprus
Coordinator name and email	Zacharias Zacharia zach@ucy.ac.cy Nikoletta Xenofontos xenofotnos.nikoletta@ucy.ac.cy Anna Fiakkou fiakkou.anna@ucy.ac.cy
Activity Form	In school activity
Activity Type	Implementation activity
School profile	Gymnasio Makedonitissas is a public high school in Nicosia, Cyprus. “Γυμνάσιο Μακεδονίτισσας”: http://gym-makedonitissa-lef.schools.ac.cy/
Total number of teachers/schools	70 secondary students (14-15 years old, 30 boys and 40 girls)
Implemented online labs	Electric circuits ILS (in Greek): http://graasp.eu/ils/564105970fffcc3250f7fa96/?lang=el
Brief description	The main purpose of the ILS implementation was the evaluation of the usability and impact of the Experiment Design Tool included in the ILS. Data from pre- and post- tests were analyzed for experimental design study purposes. The participants were coming from three classes, in which the physics teacher was the same. The implementation lasted three class meetings with each class. At the first class meeting student completed pre-tests, at the second meeting they performed the activities of the ILS and at the last meeting the completed post-test. Each class meeting lasted approximately 40 minutes.

Learning outcomes	Students were able to use the EDT in the ILS and design their experiments to investigate the series and parallel circuits. The tool helped them to manipulate the variables involved in the phenomenon under study and perform their experiments in the lab. Finally, it was expected that students improved their knowledge and inquiry skills.
Photos or other relevant material	   

G O - L A B Event Code	CY09-04122015
Title	e-Scientists in a Modern Society
Country City/Region	Cyprus, Limassol
Working language	Greek
Start/End Date	04/12/2015
Organizing Institute	University of Cyprus (ReSciTEG – Research in Science and Technology Education Group) Mediterranean Science Festival (SciCo – Science Communication / Research Promotion Foundation)
Coordinator name and email	Nikoletta Xenofontos – xenofontos.nikoletta@ucy.ac.cy Anna Fiakkou – fiakkou.anna@ucy.ac.cy Zacharias Zacharia – zach@ucy.ac.cy
Activity Form	Workshop for kids
Activity Type	National activities: Science Festival

Total number of teachers/schools	Approximately 20 students
Implemented online labs	Electrical circuit lab - http://www.golabz.eu/lab/electrical-circuit-lab Splash: Virtual Buoyancy Laboratory - http://www.golabz.eu/lab/splash-virtual-buoyancy-laboratory Osmotic Power Lab - http://www.golabz.eu/lab/osmotic-power-lab Craters on Earth and Other Planets - http://www.golabz.eu/lab/craters-earth-and-other-planets
Brief description	The following text was disseminated in the website of the festival, so that teachers could apply to visit the workshop "What will happen if an asteroid hit the Earth? How can a desalination center become a power station? When a light bulb in our house is burned, all the others continue to light up. Why this happens? Why a heavy log of wood floats in a river while a very light paperclip sinks? And this is how the story begins… curiosity… research… science… knowledge. Nowadays, by the means of a powerful technological investment, the computer, each of us can be considered as a scientist, who discovers the new knowledge through a very simple experimentation process, which is characterized by repeatability." The students who participated in the workshop had the opportunity to use the online labs for science investigations. Specifically, they were involved in four different mini missions, in which they used online labs to answer the initial question of each mission. The four missions are given to the following URLs, in the Greek language: Brightening the Christmas tree!- http://graasp.eu/ils/565cb1100fffcc3250f80448/?lang=el Learning about the sinking and floating of the objects! - http://graasp.eu/ils/565f5a270fffcc3250f80576/?lang=el Craters on the Earth - http://graasp.eu/ils/565b54580fffcc3250f80341/?lang=el Electricity from…salt! - http://graasp.eu/ils/565e8dc50fffcc3250f804ea/?lang=el
Learning outcomes	The students learned how to use the four online labs mention above. They were able to manipulate the several parameters in the labs and investigate what would happen if they change only one thing at a time. Thus, they were familiarized with the VOTAT (Vary One Thing At a Time) strategy. In the first mission students used the Electrical Circuit lab and created several circuits, in series and in parallel and explored their differences. At the end of the mission they were able to give an answer on how the lights in a Christmas tree are connected and why. In the second mission students were ask to predict if a heavy log of wood and a light paperclip will sink or float. Then they used the Splash lab and investigated when an object sinks or floats in a specific fluid. The topic of the third mission was the extinction of dinosaurs which is related to the hit of an asteroid to the earth. The lab used in this mission allowed students to manipulate several parameters of an asteroid so that to explore the influences if the asteroid hits the earth. In the last mission students learned how an osmotic power station works and how this can be connected to the process of desalination. Then, they used the lab to investigate when the production of electricity is more, by changing several parameters in the lab.
Website	http://www.mediterraneansciencefestival.com/en/event/e-scientists-in-a-modern-society/

Photos or other relevant material	   
Event agenda	The program of the science festival - http://www.mediterraneansciencefestival.com/wp-content/uploads/2015/12/MSF-Programme-2015.pdf

G O - L A B Event Code	CY09-13022016
Title	ILS implementation: Electrical Circuits (in Greek)
Country City/Region	Cyprus, Nicosia
Working language	Greek
Start/End Date	13/02/2016
Organizing Institute	University of Cyprus
Coordinator name and email	Zacharias Zacharia zach@ucy.ac.cy Nikoletta Xenofontos xenofotnos.nikoletta@ucy.ac.cy Tasos Hovardas hovardas@ucy.ac.cy
Activity Form	In-school activity
Activity Type	Implementation activity
School profile	Department of Education - University of Cyprus http://www.ucy.ac.cy/edu/en/

Total number of teachers/schools	43 undergraduate students (19 - 21 years old, 9 males and 34 females)
Implemented online labs	Electrical circuits ILS (in Greek): http://graasp.eu/ils/56b856f35829e7041c0ff780/?lang=el
Brief description	The undergraduate students used Go-Lab during their course in "Teaching Natural Sciences". Specifically, they completed an ILS about the Electrical Circuits, and went through the five phases of the inquiry cycle. In addition, they used the main supporting tools for undertaking a series of activities during their inquiry. Specifically, they used the Hypothesis Scratchpad, the EDT, the Observation tool, the Data Viewer and the Conclusion tool. The main purposes of this implementation activity were to let undergraduate students experience inquiry as learners and reflect on their experience as future teachers. During the implementation, data from pre- and post- tests, concerning knowledge and inquiry skills were collected.
Learning outcomes	All students successfully completed all activities in the ILS, even though some loading issues appeared. The use of the Hypothesis Scratchpad tool, the Electrical circuit lab and the Observation tool was more convenient compared to other tools. Students encountered many difficulties in using the EDT, basically because they did not pay proper attention to the instructions included in the tool. Additionally, not all of them were able to create graphs in the Data Viewer tool, mainly because their designs in the EDT had been incomplete. Thus, later in the Conclusion phase they did not have graphs to add in the Conclusion tool. However, it is expected that students will improve their knowledge, inquiry skills and motivation.

G O - L A B Event Code	CY09-25022016-26022016
Title	Implementation of 3 ILSs about Electrical circuits (in Greek)
Country City/Region	Cyprus, Larnaca
Working language	Greek
Start/End Date	25/02/2016 & 26/02/2016
Organizing Institute	University of Cyprus
Coordinator name and email	Zacharias Zacharia zach@ucy.ac.cy Nikoletta Xenofontos xenofontos.nikoletta@ucy.ac.cy Tasos Hovardas hovardas@ucy.ac.cy
Activity Form	In-school activity
Activity Type	Implementation activity
School profile	Aradippou Lyceum is a public senior high school in Larnaca, Cyprus. "Λύκειο Αραδίππου": http://lyk-aradippou-lar.schools.ac.cy/

Total number of teachers/schools	16 secondary students (16 years old, 5 boys and 11 girl)
Implemented online labs	Electrical circuits 1 http://graasp.eu/ils/56ddc0e05829e7041c100bcc/?lang=en Electrical circuits 2 http://graasp.eu/ils/56ddcf4e5829e7041c100bd1/?lang=en Electrical circuits 3 http://graasp.eu/ils/56de85515829e7041c100bef/?lang=en
Brief description	The main purpose of the implementation of the three ILSs was the evaluation of the impact of Go-Lab use on student knowledge, inquiry skills and motivation. In each ILS, students used several apps, in order to perform their inquiry cycle and the Electrical circuit lab, in order to investigate the series and parallel circuits and conclude the Ohm's law. More specific, students used the Hypothesis Scratchpad tool in the Conceptualization phase, the Experiment Design tool, the Observation tool and the Data Viewer in the Investigation phase, the Conclusion tool in the Conclusion phase and the Reflection tool in the Discussion phase. The students completed the first ILS in approximately 60 minutes and the second and third ILSs in approximately 50 minutes. Before and after the implementation three different tests were administered to students, namely the knowledge test, the inquiry skills test and the motivation test. In addition, screen-captured data were collected. These data depict the exact navigation and actions of each student in real time and they will be used for further analysis.
Learning outcomes	All students successfully completed all three ILSs, without any serious technical problems. The only tool that didn't load was the Input Box. In that case, the students recorded their answers in a word document. In general, students were able to use all tools in all ILSs, without any important difficulties. Especially, in the last ILS, they were able to act as self-regulated learners. In addition, it is expected that the students will improve their knowledge, inquiry skills and motivation.
Photos or other relevant material	 

G O - L A B Event Code	CY09-06092016
Title	New Technologies in Science Learning – The Go-Lab and the potentials it offers for the integration of online labs in science teaching
Country City/Region	Cyprus, Nicosia
Working language	Greek
Start/End Date	06/09/2016
Organizing Institute	Cyprus Ministry of Education, Cyprus Pedagogical Institute
Coordinator name and email	Zacharias Zacharia zach@ucy.ac.cy Nikoletta Xenofontos xenofontos.nikoletta@ucy.ac.cy Tasos Hovardas hovardas@ucy.ac.cy
Activity Form	Seminar – Workshop
Activity Type	National activity
Total number of teachers/schools	19 in-service teachers (primary education)
Implemented online labs	Demonstration of: Go-Lab Portal ILS: “How are the light fixtures in a house connected?” (in Greek) Graasp

Brief description	The event was part of a two-day training program, organized by the Cyprus Ministry of Education and the Cyprus Pedagogical Institute. During this program, the teachers of the public primary schools had the opportunity to participate in a seminar of their choice, among a variety of subjects. The maximum number of participants in each seminar was 20 teachers. In collaboration with the Ministry of Education and the Pedagogical Institute, our research group, had offered the seminar entitled “New Technologies in Science Learning – The Go-Lab and the potentials it offers for the integration of online labs in science teaching”. The first session of the seminar involved an ice-breaking activity, since the participants were coming from different schools of Nicosia. During this activity, they had the opportunity to get to know each other, and share their experiences on science teaching, emphasizing the needs and difficulties they usually meet in their class. After the ice-breaking activity, they were introduced to the Go-Lab project and the inquiry learning. At the end of the first session, a short demonstration of the Go-lab portal was done, which focused on the content of the portal and on how to search among online labs, apps and inquiry spaces. The second session of the seminar took place in a computer laboratory and the teachers worked in small groups, in order to explore the Go-Lab portal themselves, and try online labs and apps. Then, they went through an ILS (“How are the light fixtures in a house connected?”) in Greek and they completed its activities. During this sequence of activities, they had the opportunity to interact with each other and share their thoughts about the inquiry processes and Go-Lab tools. After the completion of the ILS, they had been introduced to the Graasp authoring environment. Later, they created an account (one teacher per group) in order to try as many options as they could (e.g., create an ILS, add items, share a space, etc.). At the end of the seminar, the teachers reflected on what they had learned and shared their thoughts about using Go-Lab in the future.
Learning outcomes	After teacher training, all teachers learned how to explore the Go-Lab portal and search for online labs, apps, inquiry spaces and supporting material. In addition, they learned how to use the Graasp and they tried almost all options offered by the authoring environment. At the end of the session, they expressed their enthusiasm about the richness of the Go-Lab portal and the features of the Graasp. They recognized the importance of the virtual experimentation in science teaching, and how Go-Lab can strengthen the experience of students when learning science. However, their main concern to use Go-Lab in their classes was the lack of the appropriate equipment. Some schools, especially rural ones, do not even have a computer laboratory or tablets for students to use.

Photos or other relevant material	   
Event agenda	08:30 – 10:30 Ice breaking activity Introduction on the Go-Lab project and Inquiry learning Demonstration of the Go-Lab portal 10:30 – 11:00 Break 11:00 – 13:00 Training on how to explore Go-Lab portal Training on how to use the Graasp authoring tool Discussion

II.3 Estonia

G O - L A B Report Code	EEUTE-081015
Title	Activity with students
Country City/Region	Estonia / Tartu
Working language	*Estonian*
Start/End Date	08/10/2015
Partners Involved	UTE
Coordinator name and email	Mario Mäeots, mario.maeots@ut.ee
School Profile	Tartu Mart Reiniku School is a public basic school in Tartu, Estonia. https://www.reiniku.edu.ee/
Number and age of students	22 students (12-13 years old)
Activity Description	During the intervention students worked with a physics-based ILS called "Splash". In this ILS students had to formulate a hypothesis and test it using a Splash virtual lab. Four apps were embedded in the ILS: a Hypothesis Scratchpad in the Conceptualization phase, an Observation Tool in the Investigation phase, Conclusion Tool in the Conclusion phase and Input Box for reflection in the Discussion phase. The intervention was one school lesson (45 minutes).
Implemented online labs	Lab: Splash ILS: http://graasp.eu/ils/56152768b8fd4d2280c741b7/?lang=et
Learning outcomes	The lesson had following outcomes: The concepts of sinking and floating were revised. This supported the fulfillment of the Estonian science curriculum. Inquiry skills such as formulating hypotheses and their reflection skills were improved. This supported students' general knowledge about the inquiry process.

Photos or other relevant material	 

G O - L A B Report Code	EEUTE-281015
Title	Activity with students
Country City/Region	Estonia / Tartu
Working language	Estonian
Start/End Date	28/10/2015
Partners Involved	UTE
Coordinator name and email	Mario Mäeots, mario.maeots@ut.ee
School Profile	Tartu Hansa Kool (Tartu Hansa School) Go-Lab pilot school http://hansa.tartu.ee
Number and age of students	22 students, age 14-15 years old
Activity Description	During the intervention students worked with a chemistry-based ILS called “What is pH?”. Students used Wi-Fi enabled tablets. In this ILS students had to formulate two hypotheses and test them using a virtual lab provide PheT Simulations. Four apps were embedded in the ILS: a Hypothesis Scratchpad in the Conceptualization phase, an Observation Tool in the Investigation phase, Conclusion Tool in the Conclusion phase and Reflection Tool for reflection in the Discussion phase.

	The intervention was one school lesson (45 minutes).
Implemented online labs	Lab: Acid-Base Solutions ILS: http://graasp.eu/ils/56409fa20fffcc3250f7f8e4/?lang=et
Learning outcomes	The lesson had following outcomes: The concept of pH was revised. This supported the fulfillment of the Estonian science curriculum. Inquiry skills such as formulating hypotheses, formulating conclusions and students' reflection skills were improved. This supported students' general knowledge about the inquiry process.
Photos or other relevant material	 

G O - L A B Report Code	EEUTE-101115
Title	Activity with students
Country City/Region	Estonia / Tartu
Working language	*Estonian*
Start/End Date	10/11/2015
Partners Involved	UTE
Coordinator name and email	Mario Mäeots, mario.maeots@ut.ee
School Profile	Tartu Kivilinna School is a public basic school in Tartu, Estonia. Go-Lab pilot school https://kivilinn.tartu.ee/
Number and age of students	20 students (12-13 years old)

Activity Description	During the intervention students worked with a physics-based ILS called "Splash". In this ILS students had to formulate a hypothesis and test it using a Splash virtual lab. Four apps were embedded in the ILS: a Hypothesis Scratchpad in the Conceptualization phase, an Observation Tool in the Investigation phase, Conclusion Tool in the Conclusion phase and Input Box for reflection in the Discussion phase. The intervention was one school lesson (45 minutes).
Implemented online labs	Lab: Splash ILS: http://graasp.eu/ils/5640dfe00fffcc3250f7fa73/?lang=et
Learning outcomes	The lesson had following outcomes: The concepts of sinking and floating were revised. This supported the fulfillment of the Estonian science curriculum. Inquiry skills such as formulating hypotheses and their reflection skills were improved. This supported students' general knowledge about the inquiry process.
Photos or other relevant material	

G O - L A B Report Code	EEUTE-111115
Title	Activity with students
Country City/Region	Estonia / Tartu
Working language	Estonian
Start/End Date	11/11/2015
Partners Involved	UTE
Coordinator name and email	Mario Mäeots, mario.maeots@ut.ee

School Profile	Tartu Kivilinna School is a public basic school in Tartu, Estonia. Go-Lab pilot school https://kivilinn.tartu.ee/
Number and age of students	24 students (12-13 years old)
Activity Description	During the intervention students worked with a chemistry-based ILS called "What is pH?" In this ILS students had to formulate two hypotheses and test them using a virtual lab provide PheT Simulations. Four apps were embedded in the ILS: a Hypothesis Scratchpad in the Conceptualization phase, an Observation Tool in the Investigation phase, Conclusion Tool in the Conclusion phase and Reflection Tool for reflection in the Discussion phase. The intervention was one school lesson (45 minutes).
Implemented online labs	Lab: Acid-Base Solutions ILS: http://graasp.eu/ils/56409fa20fffcc3250f7f8e4/?lang=et
Learning outcomes	The lesson had following outcomes: The concept of pH was revised. This supported the fulfillment of the Estonian science curriculum. Inquiry skills such as formulating hypotheses, formulating conclusions and students' reflection skills were improved. This supported students' general knowledge about the inquiry process.
Photos or other relevant material	

G O - L A B Report Code	EEUTE-131115
Title	Activity with students
Country City/Region	Estonia / Tartu
Working language	Estonian

Start/End Date	13/11/2015
Partners Involved	UTE
Coordinator name and email	Mario Mäeots, mario.maeots@ut.ee
School Profile	Tartu Kivilinna School is a public basic school in Tartu, Estonia. Go-Lab pilot school https://kivilinn.tartu.ee/
Number and age of students	20 students (12-13 years old)
Activity Description	During the intervention students worked with a physic-based ILS called “Series and parallel circuits”. In this ILS students had to formulate two hypotheses, for testing them they construct electrical circuits using a Electrical circuit lab. Three apps were embedded in the ILS: a Hypothesis Scratchpad in the Conceptualization phase, Data viewer in the Investigation phase and Conclusion Tool in the Conclusion phase. The intervention was one school lesson (45 minutes).
Implemented online labs	Lab: Electrical circuit lab ILS: http://graasp.eu/ils/56409fa20fffcc3250f7f8e4/?lang=et
Learning outcomes	The lesson had following outcomes: The concept of electrical circuits was revised. Inquiry skills such as formulating hypotheses, formulating conclusions and analyzing data were improved.
Photos or other relevant material	 

G O - L A B Report Code	EEUTE-201115
Title	Activity with students
Country City/Region	Estonia / Tartu
Working language	Estonian
Start/End Date	20/11/2015
Partners Involved	UTE
Coordinator name and email	Mario Mäeots, mario.maeots@ut.ee
School Profile	Tartu Kristjan Jaak Petersoni Gümnaasium (Tartu Kristjan Jaak Petersoni Secondary School) is a public secondary school in Tartu, Estonia. Go-Lab pilot School https://kjpg.tartu.ee/
Number and age of students	25 students, age 18-19 years old
Activity Description	Students were asked to solve an inquiry task using ILS called “Is it good to be beautiful? An ILS consisted following inquiry phases: Orientation, Hypothesis formulation, Investigation, Conclusion formulation and Discussion. Data was collected with the virtual lab *Sexual Selection in Guppies*.
Implemented online labs	Lab: Sexual Selection in Guppies ILS: http://graasp.eu/ils/564ecf510fffcc3250f80092/?lang=et
Learning outcomes	The lesson had following outcomes: The concept of natural selection and sexual selection was revised. Inquiry skills such as formulating hypotheses and conclusions were developed.

Photos or other relevant material	   

II.4 Germany

G O - L A B Event Code	DE10-181115
Title	Introduction to Go-Lab with overview of Labs and ILSs, a report about experiences with Go-Lab from an experienced Go-Lab teacher, and Hands-On
Country City/Region	Germany, Essen
Working language	German
Start/End Date	18/11/15
Organizing Institute	University of Duisburg-Essen
Coordinator name and email	Kristina Angenendt, angenendt@collide.info
Activity Form	Visionary + training workshop + practice reflection (135mins)
Activity Type	Local
Total number of teachers/schools	4 teachers from different schools
Implemented online labs	Osmosis Lab, Cryptography Labs, Electric Circuit Lab, Archimedes' Principle (as well as several apps and ILSs)

Brief description	This activity was mainly intended to introduce Go-Lab as a project and online labs, apps, and ILSs to new teachers. The content was a general description of the project, the partners and the goals. Several labs, mainly two ILSs, and around 7 apps have been presented. We also included a part where one of our experienced Go-Lab teachers talked about her usage of ILSs in class and her participation in the summer school in Greece. In the end, the teachers took part in a large hands-on session where they were encouraged to try out everything they wanted to.
Learning outcomes	The Participants have learned about the project and how to integrate it into their classroom. After being presented with two ILSs, several labs, and seven apps, they got in contact with an experienced Go-Lab teacher who told them about her experiences with building and using ILSs, and evaluating her students' outcomes afterwards, as well as her participation in the summer school and her contribution to the teacher contest. The last 90 minutes (135mins in total) the teachers were encouraged to try out all the possibilities and different parts of Go-Lab by visiting golabz.eu and building their own ILSs on grasp.eu. They thoroughly used a lot of apps and labs and even tried out filling the ILSs with their own material. Afterwards, a brief question & answer part was held. All the teachers seemed very interested in Go-Lab and tried to come up with several possibilities for its usage in classroom, for example using an ILS to prepare students for real experiments or letting them work with an ILS as homework. Two of them told us that they might get in touch with us in the future.
Event agenda	Brief introduction and description of the project Presentation of several ILSs, labs, and apps Short introduction in how to use grasp Report from an experienced Go-Lab teacher on her usage of ILSs in class as well as her participation in the summer school 2015 Presentation of the new Go-Lab teacher contest 2016 Hands-On

G O - L A B Event Code	DE_-030516
Title	Go-Lab: Experimenting with Virtual und Remote Labs
Country City/Region	Germany, Duisburg
Working language	German
Start/End Date	03/05/16
Organizing Institute	University of Duisburg-Essen
Coordinator name and email	Kristina Angenendt, angenendt@collide.info
Activity Form	Implementation Training
Activity Type	National

Total number of teachers/schools	4 teachers
Implemented online labs	Remote Microscope, Archimedes' Principle, Colour of the Light, Fishbowl Population, Osmosis Lab, several Apps, OsmoCity ILS, Cryptography ILS
Brief description	This activity was intended to introduce Go-Lab as a project and online labs and apps to teachers as well as helping them taking the first steps toward building their own ILSs that are meant to be implemented in schools. The content was a general description of the project and introducing the Go-Lab idea, as well as demonstrating how to use ILS and labs and apps of several domains, and how to build an ILS in the Graasp authoring environment. In the extended Hands-On part afterwards, the teachers have been asking questions and were shown tips and tricks on an individual basis.
Learning outcomes	Participants have mainly learned about the project and how to use Graasp to build ILSs that can be used in class or use already existing ILSs. Each of them showed interest in different aspects of Go-Lab (rather apps or a certain lab, etc.). All of them, especially the co-principle of their school, were determined to use Go-Lab in class. They have already been contacting us with particular questions concerning labs and apps they mean to use.
Event agenda	Go-Lab's ideas and possibilities Golabz.eu's inventory, apps, labs, and ILSes Graasp Hands-On-Part

II.5 Greece

G O - L A B Event Code	GR02-230112015
Title	Science Teachers Training
Country City/Region	Irakleio, Crete, Greece
Working language	Greek
Start/End Date	23/11/2015
Organizing Institute	Ellinogermaniki Agogi (EA)
Coordinator name and email	Georgios Mavromanolakis gmavroma@ea.gr
Activity Form	Teacher Training
Activity Type	Local The training conducted in collaboration with the Regional Center of Science Education (Εργαστηριακό Κέντρο Φυσικών Επιστημών Ηρακλείου Κρήτης)
Total number of teachers/schools	16 teachers from 12 schools from the area of Irakleio

Implemented online labs	Phet labs, Geogebra, Impact Calculator, iSpyCMS, ESA-SOHO, Electric circuits, etc, and related ILSs
Brief description	The participant science teachers were trained on: the IBSE teaching approaches the use of on-line labs and the golabz.eu repository of resources the Go-Lab authoring environment the Go-Lab supportive applications and tools the use in classroom teaching of certain ILSs related to the high-school curriculum
Learning outcomes	Familiarization with the IBSE approach and its objectives. Practice and use of the Go-Lab repository of labs and Inquiry Learning Spaces. Practice and use of the offered tools and support.

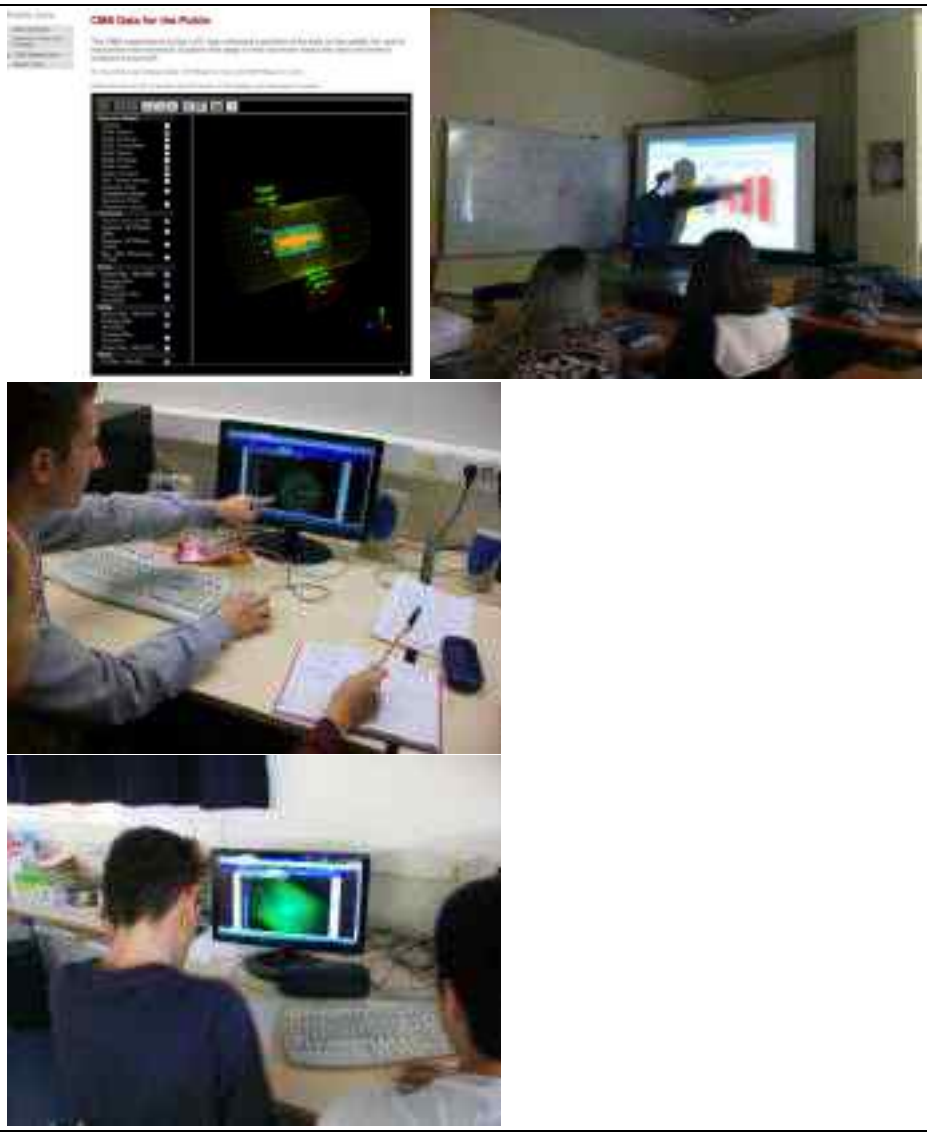
G O - L A B Report Code	GR02-15022016
Title	High school students analyze data from particle physics experiment at CERN
Country City/Region	Greece, Nea Smyrni-Athens
Working language	Greek and English
Start/End Date	01/02/2016 and 15/02/2016
Partners Involved	EA
Coordinator name and email	G.Mavromanolakis gmavroma@ea.gr
School Profile	High-school of Evangeliki Scholi in Nea Smyrni during the last years is participating very actively in EU educational projects and on implementing innovative teaching methods and technologies
Number and age of students	16 high school students, age 16-18 years old
Activity Description	The educational activity consists of two parts, each about two hours long, implemented on 01/02/2016 and on 15/02/2016 respectively. In the former part students attend a lecture by G. Mavromanolakis (former researcher at CERN) on particle physics research, science and technology. In the second part of the activity students analyze data from the CMS particle physics experiment at the Large Hadron Collider of CERN using the iSpyCMS online lab (dataset and event display/analysis tool).
Implemented online labs	iSpyCMS (dataset and event display/analysis)
Learning outcomes	Students get a better understanding how frontier scientific research is conducted, how cutting edge technologies are developed, what is the everyday job of researchers, scientists and engineers is in a large international research center etc. They use real scientific data to investigate and answer a scientific question. They develop and practice their digital skills by using online resources and tools. They understand how abstract concepts from their physics

	curriculum like the principles of “conservation of energy and momentum” and “conservation of charge” are applied and manifested in the microcosmos.
Photos or other relevant material	 

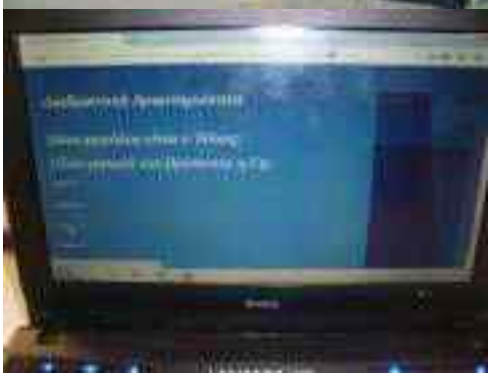
G O - L A B Event Code	GR02-23022016
Title	Science Teachers Training
Country City/Region	Pallini, Attiki, Greece
Working language	Greek
Start/End Date	23/02/2016 and 20/04/2016
Organizing Institute	Ellinogermaniki Agogi (EA)
Coordinator name and email	Georgios Mavromanolakis gmavroma@ea.gr
Activity Form	Teacher Training
Activity Type	Local The training conducted in collaboration with the Regional Center of Science Education (Εργαστηριακό Κέντρο Φυσικών Επιστημών Ανατ.Αττικής) and the School Counsellor
Total number of teachers/schools	27 teachers from 20 schools from the areas of Eastern Attica
Implemented online labs	Phet labs, Geogebra, Impact Calculator, iSpyCMS, ESA-SOHO, Electric circuits, etc, and related ILSs

Brief description	The participant science teachers were introduced and trained on: the IBSE teaching approaches the use of on-line labs and the golabz.eu repository of resources the use in classroom teaching of certain ILSs related to the high-school curriculum
Learning outcomes	Familiarization with the IBSE approach and its objectives. Practice and use of the Go-Lab repository of labs and Inquiry Learning Spaces.

G O - L A B Report Code	GR02-15032016
Title	High school students analyze data from particle physics experiment at CERN
Country City/Region	Greece, Koropi, Attiki
Working language	Greek and English
Start/End Date	15/03/2016
Partners Involved	EA
Coordinator name and email	G.Mavromanolakis gmavroma@ea.gr
School Profile	3rd High-school (Lyceum) of Koropi, Attiki. The school has started implementing innovative learning activities and participating in EU funded projects on science education and “Responsible Research and Innovation”.
Number and age of students	21 high school students, age 17-18 years old
Activity Description	The educational activity consists of two parts, each about two hours long, implemented on 15/03/2016. In the former part students attend a lecture by G. Mavromanolakis (former researcher at CERN) on particle physics research, science and technology. In the second part of the activity students analyze data from the CMS particle physics experiment at the Large Hadron Collider of CERN using the iSpyCMS online lab (dataset and event display/analysis tool).
Implemented online labs	iSpyCMS (dataset and event display/analysis)
Learning outcomes	Students get a better understanding how frontier scientific research is conducted, how cutting edge technologies are developed, what is the everyday job of researchers, scientists and engineers is in a large international research center etc. They use real scientific data to investigate and answer a scientific question. They develop and practice their digital skills by using online resources and tools. They understand how abstract concepts from their physics curriculum like the principles of “conservation of energy and momentum” and “conservation of charge” are applied and manifested in the microcosmos.

Photos or other relevant material	

G O - L A B Report Code	GR02-04042016
Title	How big is the Sun? How far is it?
Country City/Region	Greece, Pallini Athens
Working language	Greek and German
Start/End Date	From 04/04/2016 to 12/04/2016 and on 19-23/05/2016
Partners Involved	EA
Coordinator name and email	G.Mavromanolakis gmavroma@ea.gr

School Profile	Primary school (5th and 6th grades) of Ellinogermaniki Agogi. The school and staff has proven track record on using innovative teaching methods and extra-curricular interdisciplinary educational activities
Number and age of students	Activity in Greek, in total 175 primary school students (7 classes), age 10-12 years old Activity in German, in total 40 primary school students (2 classes), age 10-12 years old
Activity Description	During the school period in April and May, various inquiry-based educational activities were implemented in EA primary school as part of the standard curriculum program. The activity “How big is the Sun? How far is it?” was specially developed in collaboration with the teachers of the primary school and is directly linked to the maths/geometry and natural sciences curriculum. In this, students through hands-on and interactive activities follow an inquiry cycle (introduction, hypothesis, investigation, conclusion, discussion) to develop deep concept and content understanding about the size of the Sun, the Earth and other planets, the distances in the solar system etc. The educational activities were implemented in the 5th and 6th grade with ILSs in Greek and in German.
Implemented online labs	Labs designed in Geogebra, ESA-SOHO dataset ILS in Greek: http://graasp.eu/ils/56dd39bc5829e7041c100b66/?lang=el ILS in German: http://graasp.eu/ils/57399120c3ddb608c844c10a/?lang=de
Learning outcomes	Students follow a full inquiry cycle. Students learn to formulate hypothesis and research questions, to investigate them by gathering scientific data, to reach to conclusions that they then present and discuss. They also get a better understanding of the relation between maths, science and technology.
Photos or other relevant material	 

G O - L A B Report Code	GR02-11052016
Title	“Little crafts and great challenges” educational contest for junior high school students
Country City/Region	Greece, Kerkyra
Working language	Greek
Start/End Date	19/04/2016 – 11/05/2016
Partners Involved	EA
Coordinator name and email	G.Mavromanolakis gmavroma@ea.gr The contest conducted in collaboration with the Regional Center of Science Education (Εργαστηριακό Κέντρο Φυσικών Επιστημών Κέρκυρας) and the Sailing Club of the city
School Profile	10 student teams from 8 rural and urban junior high-schools (Gymnasia) of Kerkyra island. The local community of teachers, principal and counselor of science education, have proven track record on innovative teaching and organization of extra-curricular interdisciplinary educational activities and contests
Number and age of students	30 junior high school students, age 13-15 years old
Activity Description	The activity “Little crafts and great challenges” was formed as a science and technology contest for schools (pictures shown below is from the relevant webpage with description/registration for the contest). It involves a collection of inquiry activities related to several science subjects including physics, maths, technology and engineering. In these series of activities students form teams and are challenged to design, study and build a ship with certain only materials to carry a payload. They build a model with simple materials and test it in a physical lab. They elaborate their knowledge with virtual labs (ie Splash) and simulations (PhET applets). At the end they have to make a presentation about their project. In the final stage of the activity the teams of students compete with their models in a water pool. The final part of the contest was kindly hosted by the local sailing club (see photos below).
Implemented online labs	Splash lab, PhET simulations (buoyancy, density), Archimedes lab http://graasp.eu/ils/5706451cc3ddb608c844ad51/?lang=el

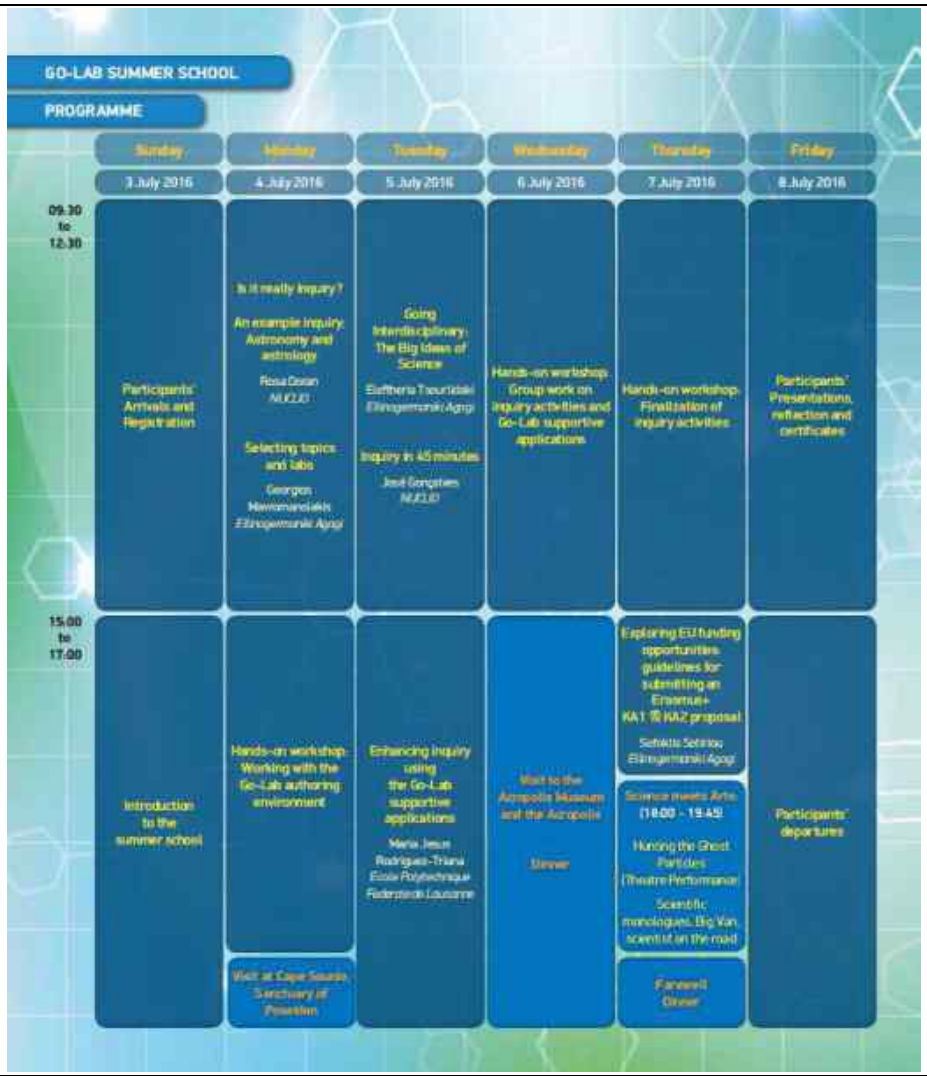
Learning outcomes	Through inquiry, and experimentation using both physical and virtual labs, students acquire content and concept knowledge on subjects like forces, motion, Newton's laws, equilibrium, buoyancy, structural stability, modeling, engineering practices and principles, properties of materials, etc. Through group work they also improve their social and verbal skills (collaboration, communication, presentation, project management) and develop key competencies (creativity, innovative thinking, problem solving, digital literacy).
Photos or other relevant material	   

G O - L A B Event Code	GR02-21072016
Title	International Science Teachers Training Course
Country City/Region	Marathon, Greece
Working language	English
Start/End Date	03/07/2016 – 08/07/2016
Organizing Institute	Ellinogermaniki Agogi (EA)
Coordinator name and email	Georgios Mavromanolakis gmavroma@ea.gr Tsourlidaki Eleftheria eleftheria@ea.gr Sofoklis Sotiriou sotiriou@ea.gr
Go-Lab Partners that were also Involved	Maria Jesus Rodriguez Triana (EPFL) Diana Dikke (IMC) Rosa Doran (NUCLIO) Jose Concalves (NUCLIO)
Activity Form	Summer School
Activity Type	International
Total number of teachers/schools	36 teachers from 36 schools from 20 countries around Europe

Implemented online labs	Phet labs, Geogebra, Impact Calculator, Climate change, Splash, and several other labs that teachers found and proposed
Brief description	Summer School for science teachers on: the IBSE teaching approaches the use of on-line labs the Go-Lab authoring environment the Go-Lab supportive application creating activities through collaboration between teachers All participants worked in teams. Each team prepared one ILS. The common theme among all ILSs was the Sun. The ILS produced are listed below: Team “Climate Change” ILS title: Climate Change: Natural, Human Causes ILS link: http://graasp.eu/ils/577f476ac3ddb608c844d8d1/?lang=en Team “Transit of Mercury” ILS title: Transit of Mercury ILS link: http://graasp.eu/ils/577e2a0cc3ddb608c844d889/?lang=en Team “Floating Quartet” ILS title: Density ILS link: http://graasp.eu/ils/577e2b37c3ddb608c844d88b/?lang=en Team “Diffusion across membranes” ILS title: Diffusion Across a Semipermeable Membrane ILS link: http://graasp.eu/ils/577f4534c3ddb608c844d8cf/?lang=en Team “Photosynthesis” ILS title: Plant growth ILS link: http://graasp.eu/ils/577f4829c3ddb608c844d8d2/?lang=en Team “Roller-coasters” ILS title: Crazy race - studying energy ILS link: http://graasp.eu/ils/577e59dac3ddb608c844d898/?lang=en Team “Go Satellite!” ILS title: Go Satellite! ILS link: http://graasp.eu/ils/577e164ec3ddb608c844d882/?lang=en Team “Earth smashers” ILS title: Craters in the Solar System ILS link: http://graasp.eu/ils/577cb9a0c3ddb608c844d84a/?lang=en
Learning outcomes	Acquaintance with the IBSE approach. Training on the use of the Go-Lab Inquiry Learning Spaces. Training on the use of the Go-Lab tools and services. Acquaintance with the “Big Ideas of Science”
Website	http://golab.ea.gr/

Photos or other relevant material	   

Event agenda	

G O - L A B Report Code	GR18-171215
Title	Half day presentation and discussion on the ATLAS experiment and the HYPATIA ILSs in premises of the Arsakeio school of Patras.
Country City/Region	Patras, Peloponese, Greece.
Working language	Greek
Start/End Date	17/12/2015
Partners Involved	IASA, EA
Coordinator name and email	Christine Kourkoumelis, hkourkou@phys.uoa.gr
School Profile	The Arsakeio of Patras is semi-private school part of an educational foundation with high schools in the largest cities of Greece. Admission of students is by exams.The students and teachers have at their disposal excellent facilities as

	well as a physics laboratory (House of Science) and computer labs. The event was combined with a virtual visit to the South Pole Icecube experiment and a lecture by Dr.S.Sotiriou. It was very well attended by the public, students and their teachers..
Number and age of students	Morning event: 30 high school students and 5 teachers from the two Lyceums of Arsakeio
Activity Description	The objective of the talks was to present the ATLAS experiment, the Go-Lab project and the Go-Lab repository to the students and their teachers of the three schools. There has been live on-line demonstration of the Go-lab ILSs which are connected with the HYPATIA tool. The students then used the HYPATIA tool to search for Z and Higgs boons. At the end of the day they took part in a virtual visit to CERN and had the opportunity to ask questions to the researchers present at CERN. Program of the day: 10:00-11:00 Introduction to CERN, ATLAS and the new Boson,presentation of the GoLab project and GoLab portal (C.Kourkoumelis) 11:00-11:30 Break 11:30-13:00 Hands-on in PC's:students use the HYPATIA tool to look for Z and Higgs bosons(S.Vourakis) 13:00 – 14:00 Virtual Visit to the CMS experiment at CERN (C.Lazarides, A.Tsirou)
Implemented online labs	HYPATIA ILs's http://graasp.eu/ils/547311d9e9934012b7c65f88?lang=en http://graasp.eu/ils/547311dfe9934012b7c65f8a?lang=en
Learning outcomes	Acquaintance with the Go-Lab project Familiarization with Go-Lab ILSs and online labs Familiarization with the HYPATIA event analysis tool
Photos or other relevant material	http://www.arsakeio.gr/gr/patra/patra-high-school/97-greek/schools/patra/patra-high-school/26015-on-line-syndesh-me-to-cern-2 (in Greek) 

G O - L A B Event Code	GR18-090316
Title	International IPPOG Physics Masterclass in the University of Athens
Country City/Region	Greece, Athens
Working language	Greek
Start/End Date	9/3/2016

Organizing Institute	IASA
Coordinator name and email	Christine Kourkoumelis, hkourkou@phys.uoa.gr
Activity Form	Seminar,hands-on,training
Activity Type	Local (students from the Attica region)
Total number of teachers/schools	60 students from 12 schools plus 15 teachers
Implemented online labs	HYPATIA “discover the Z and Higgs boson ILSs”
Brief description	60 high school students from the wider area of Athens came to the premises of the University of Athens for one day in order to learn about particle physics, about CERN and become researchers for a day. In the morning, lectures were given by professors from the University of Athens on nuclear and particle physics. In the afternoon the students attended a hands-on experience, with introduction to Go-lab and the relevant ILSs. Furthermore, the students used the HYPATIA event display to look for Z and Higgs bosons. While the students were working on PCs, their teachers were introduced at the Greek physics ILSs of Go-lab and they experimented with few of them. At the end of the day the students compared their results with those of other institutions from other countries (France and Italy) in a videoconference with CERN.
Learning outcomes	The students are introduced to the world of high energy physics and the work being done at CERN. They get the chance to learn about the new discoveries of physics in that field. They also get a taste of what it’s like to be an actual physicist searching for new particles in the laboratory exercise with HYPATIA. The teachers get acquainted with the Golab ILSs, in particular the ones in Greek. They were guided on how to use them for their classes.
Photos or other relevant material	

Event agenda	

G O - L A B Event Code	GR18-190316
Title	International IPPOG Physics Masterclass in the University of Crete in Heraklion
Country City/Region	Greece, Heraklion, Crete
Working language	Greek
Start/End Date	19/3/2015
Organizing Institute	IASA
Coordinator name and email	Christine Kourkoumelis, hkourkou@phys.uoa.gr
Activity Form	Seminar,hands-on,training
Activity Type	National (students from all over Crete)
Total number of teachers/schools	100 students from 20 schools together with 16 teachers
Implemented online labs	HYPATIA “discover the Z and Higgs boson ILSs”

Brief description	100 high school students from all over Crete came to the University of Crete for one day in order to learn about particle physics, CERN and become researchers for a day. In the morning, lectures are given by professors from the University of Crete and the University of Athens. In the afternoon the students attended a hands-on experience, with introduction to Go-lab and the relevant ILSs. .Furthermore, the students used the HYPATIA event display to look for Z and Higgs bosons. While the students were working on the PC's, their teachers were introduced at the Greek physics ILSs of Go-lab and they experimented with few of them. At the end of the day the students compared their results with those of other institutions from other countries in a videoconference with CERN, two schools from Poland and two from Portugal.
Learning outcomes	The students are introduced to the world of high energy physics and the work being done at CERN. They get the chance to learn about the new discoveries of physics in that field. They also get a taste of what it's like to be an actual physicist searching for new particles in the laboratory exercise with HYPATIA. The sixteen teachers get acquainted with the Golab ILSs, in particular the ones in Greek.They were guided on how to use them for their classes
Website	http://hep.physics.uoc.gr/events/masterclasses/masterclass-2015/images.php
Photos or other relevant material	 

Event agenda	GO-LAB 12ο INTERNATIONAL PARTICLE PHYSICS MASTER CLASSES 2016 ΤΜΗΜΑ ΦΥΣΙΚΗΣ ΠΑΝΕΠΙΣΤΗΜΙΟ ΚΡΗΤΗΣ ΣΑΒΒΑΤΟ 19 ΜΑΡΤΙΟΥ 2016 09:00 – 10:00 Κεντρική Είσοδος Κτιρίου Φυσικού Τμήματος Εγγραφές Μαθητών/Καθηγητών Δυτείων 10:00 – 11:00 Αμφιθέατρο Α Θεωρητική Διάλεξη (Θ. Ταμαράς, Παν/μιο Κρήτης) 11:00 – 12:00 Αμφιθέατρο Α Ο ανιχνευτής ATLAS και το πρόγραμμα ανάλυσης HYPATIA (Στ. Αγγελιδάκης, Γ. Βασιλειάδης, Ν. Τσιφεντάνης, Παν/μιο Αθηνών και ΙΕΣΕ) 12:00 – 13:00 Αμφιθέατρο Α Ερωτήσεις (Θ. Ταμαράς, Χ. Κουρκουμέλη) 13:00 – 14:00 Φαγητό 14:00 – 14:30 Αίθουσες Υπολογιστών Εισαγωγή στην Ερευνητική Εργασία (Στ. Αγγελιδάκης, Γ. Βασιλειάδης, Ν. Τσιφεντάνης, Παν/μιο Αθηνών και ΙΕΣΕ) 14:30 – 16:15 Αίθουσες Υπολογιστών Επεξεργασία Γεγονότων LHC με το Πρόγραμμα HYPATIA (Στ. Αγγελιδάκης, Γ. Βασιλειάδης, Ν. Τσιφεντάνης, Παν/μιο Αθηνών και ΙΕΣΕ) Εισαγωγή στα Εργαλεία Διαθέσιμα για τους Καθηγητές (Χ. Κουρκουμέλη, Παν/μιο Αθηνών) 16:15 – 16:45 Αίθουσες Υπολογιστών Συλλογή Αποτελεσμάτων 16:45 – 18:30 Αμφιθέατρο Α Video Conference/ Quiz/ Αποτελέσματα (Ταμαράς, Τσάμης, Κουρκουμέλη, Αγγελιδάκης, Βασιλειάδης, Ν. Τσιφεντάνης)

G O - L A B Report Code	GR18-110516
Title	Half day presentation and discussion on the ATLAS experiment and the HYPATIA demonstrator in premises of the 2nd General Lyceum of Kastoria, Macedonia, Greece.
Country City/Region	Kastoria, Macedonia, Greece.
Working language	Greek
Start/End Date	11/5/2016
Partners Involved	IASA
Coordinator name and email	Christine Kourkoumelis, hkourkou@phys.uoa.gr
School Profile	The 2nd Lyceum of Kastoria is a public school with about 500 students in the outskirts of city of Kastoria (northern Greece). The students and teachers feel quite isolated and were enthusiastic about the Go-lab implementation which permitted them to get in touch with the cutting edge research and plan a visit to CERN next year.
Number and age of students	25 high school students and 3 teachers from the 2nd Lyceum of Kastoria

Activity Description	The objective of the talks was to present the ATLAS experiment, the Go-Lab project and the Go-Lab repository to the students and their teachers of the three schools. There has been live on-line demonstration of the Go-lab ILSs which are connected with the HYPATIA tool. The students then used the HYPATIA tool to search for Z and Higgs boons. At the end of the day they took part in a virtual visit to CERN and had the opportunity to ask questions to the researchers present at CERN. Program of the day: 10:00-11:00 Introduction to CERN, ATLAS and the new Boson,presentation of the GoLab project and GoLab portal (C.Kourkoumelis) 11:00-11:30 Break 11:30-13:00 Hands-on in PC's: students use the HYPATIA tool to look for Z and Higgs bosons(S.Vourakis) 13:00 – 14:00 Virtual Visit to the ATLAS experiment at CERN (N.Tsirintanis, A.Kourkoumeli)
Implemented online labs	HYPATIA ILs's http://graasp.eu/ils/547311d9e9934012b7c65f88?lang=en http://graasp.eu/ils/547311dfe9934012b7c65f8a?lang=en
Learning outcomes	Acquaintance with the Go-Lab project Familiarization with Go-Lab ILSs and online labs Familiarization with the HYPATIA event analysis tool
Photos or other relevant material	

G O - L A B Report Code	GR18-200416
Title	Half day presentation and discussion on the HYPATIA ILS as well as the other Greek ILS at the premises of the 2rd General Lyceum of Zante, Ionian Island, Greece.
Country City/Region	Zante, Ionian Island, Greece.
Working language	Greek
Start/End Date	20/04/2016
Partners Involved	IASA
Coordinator name and email	Christine Kourkoumelis, hkourkou@phys.uoa.gr
School Profile	The 2nd Lyceum of city of Zante is a public school with about 500 students in the outskirts of city. The students who attended the morning implementation came from all the different high schools of the island. In addition, the teachers of all the Junior High schools, about fifteen, attended a special afternoon

	session where all the Greek ILS were demonstrated to them and they were invited to use them at their schools..
Number and age of students	30 high school students and 15 teachers from the schools of Zante island
Activity Description	The objective of the talks was to present the ATLAS experiment, the Go-Lab project and the Go-Lab repository to the students and their teachers of the three schools. The teachers then used the Greek ILSs in a demonstrator session: 9:30-10:30 Introduction to CERN, ATLAS and the new Boson,presentation of the GoLab project and GoLab portal (C.Kourkoumelis) 10:30-12:00 Hands-on in PC's: students use the HYPATIA tool to look for Z and Higgs bosons(S.Vourakis) 16:30-18:00 Teacher activities with the Greek Go-lab ILSs (C.Kourkoumelis)
Implemented online labs	HYPATIA ILs's http://graasp.eu/ils/547311d9e9934012b7c65f88?lang=en http://graasp.eu/ils/547311dfe9934012b7c65f8a?lang=en
Learning outcomes	Acquaintance with the Go-Lab project Familiarization with Go-Lab ILSs and online labs Familiarization with the Greek high school ILSs Familiarization with the HYPATIA event analysis tool
Photos or other relevant material	

G O - L A B Report Code	GR18-300616
Title	Half day presentation and discussion on the ATLAS experiment and the HYPATIA demonstrator in premises of the 3rd General Lyceum of Giannitsa, Macedonia, Greece.
Country City/Region	Giannitsa, Macedonia, Greece.
Working language	Greek
Start/End Date	30/6/2016
Partners Involved	IASA
Coordinator name and email	Christine Kourkoumelis, hkourkou@phys.uoa.gr
School Profile	The 3rd Lyceum of Giannitsa is a public school with about 400 students in the outskirts of city of Giannitsa (northern Greece). The students who attended the masterclass came from five schools from the general area of Giannitsa. The

	activity was part of a four day long summer school organized by the Greek Society of Physicists.
Number and age of students	45 high school students and 2 teachers from the 3nd Lyceum of Giannitsa
Activity Description	The objective of the talks was to present the ATLAS experiment, the Go-Lab project and the Go-Lab repository to the students and their teachers of the three schools. There has been live on-line demonstration of the Go-lab ILSs which are connected with the HYPATIA tool. The students then used the HYPATIA tool to search for Z and Higgs boons. Program of the day: 9:30-10:30 Introduction to CERN, ATLAS and the new Boson,presentation of the GoLab project and GoLab portal (C.Kourkoumelis) 10:30-12:00 Hands-on in PC's:students use the HYPATIA tool to look for Z and Higgs bosons(S.Vourakis)
Implemented online labs	HYPATIA ILs's http://graasp.eu/ils/547311d9e9934012b7c65f88?lang=en http://graasp.eu/ils/547311dfe9934012b7c65f8a?lang=en
Learning outcomes	Acquaintance with the Go-Lab project Familiarization with Go-Lab ILSs and online labs Familiarization with the HYPATIA event analysis tool
Photos or other relevant material	

II.6 The Netherlands

G O - L A B Report Code	[NL01-16112015]
Title	Hypothesis scratchpad configurations
Country City/Region	The Netherlands, Tubbergen
Working language	English
Start/End Date	16/11/2015
Partners Involved	University of Twente (in cooperation with UCY, UTE)
Coordinator name and email	Henny Leemkuil, h.h.leemkuil@utwente.nl

School Profile	Pre-university level
Number and age of students	168 students from 6 classes, 12-14 years old
Activity Description	2 lessons in which students use one of three different configurations of the Hypothesis Scratchpad in combination with a lab
Implemented online labs	Splash
Learning outcomes	
Photos or other relevant material	

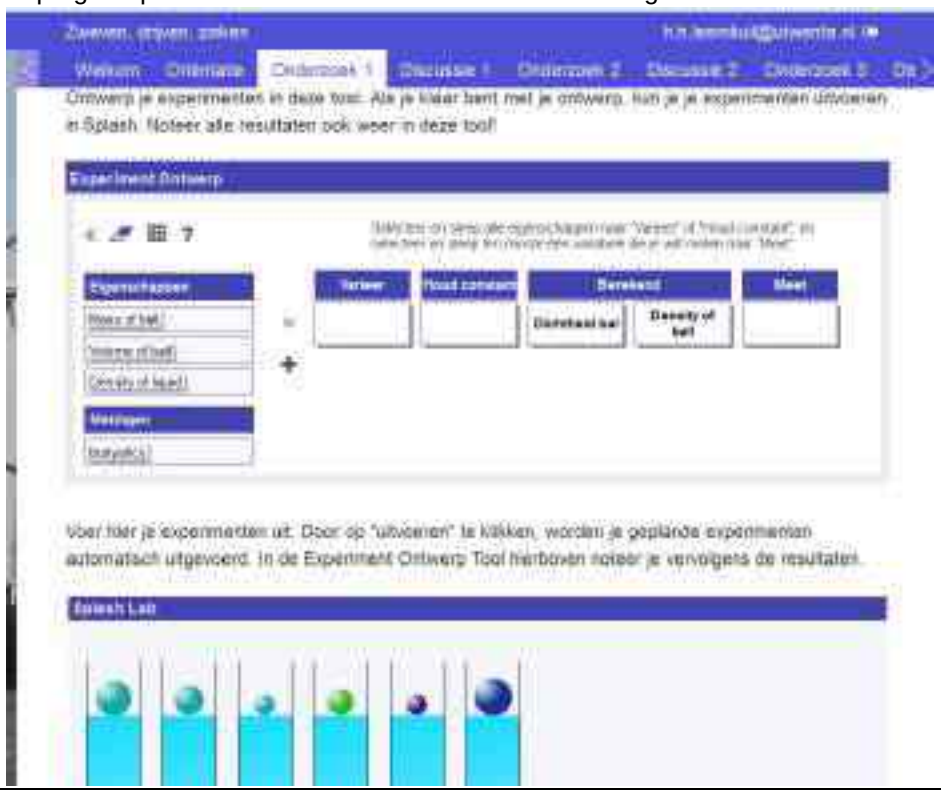
G O - L A B Report Code	[NL01-16012016]
Title	Experimental design
Country City/Region	The Netherlands, Enschede, Hengelo, Tubbergen
Working language	Dutch
Start/End Date	Jan-April
Partners Involved	University of Twente
Coordinator name and email	Henny Leemkuil, h.h.leemkuil@utwente.nl
School Profile	Pre-university level, College Zuid, Lyceum de Grundel, Canisius
Number and age of students	167 students from 8 classes from three different schools, age14-16
Activity Description	2 lessons in which students use different versions of the Experiment design tool in combination with a lab
Implemented online labs	Splash
Learning outcomes	
Photos or other relevant material	

G O - L A B Report Code	[NL01-01022016]
Title	Balancing chemical equations
Country City/Region	The Netherlands, Doetinchem
Working language	Dutch
Start/End Date	01/02/2016
Partners Involved	University of Twente
Coordinator name and email	Henny Leemkuil, h.h.leemkuil@utwente.nl
School Profile	Pre-university level; Ludger college
Number and age of students	29 students, 12-14 years old
Activity Description	Chemistry lesson about Balancing chemical equations
Implemented online labs	Phet Lab: Reactievergelijkingen doen kloppen
Learning outcomes	
Photos or other relevant material	http://graasp.eu/ils/562a016f0fffcc3250f7f429/?lang=nl

G O - L A B Report Code	[NL01-0202016]
Title	Developing an ILS
Country City/Region	The Netherlands, Enschede
Working language	English
Start/End Date	Feb-April
Partners Involved	University of Twente

Coordinator name and email	Henny Leemkuil, h.h.leemkuil@utwente.nl
School Profile	University students from the Educational Science and Technology track
Number and age of students	54 students, age 20-30
Activity Description	Students from the Educational Science and technology track developed an ILS with Graasp in groups of 4 and tested it with a small group of primary or secondary school students
Implemented online labs	At their own choice
Learning outcomes	
Photos or other relevant material	

G O - L A B Report Code	[NL01-16042016]
Title	Hypothesis generation
Country City/Region	The Netherlands, Assen
Working language	Dutch
Start/End Date	April/May 2016
Partners Involved	University of Twente
Coordinator name and email	Henny Leemkuil, h.h.leemkuil@utwente.nl
School Profile	Pre-university level (3VWO)
Number and age of students	53 students, 13-16 years old, from 2 classes
Activity Description	The activity consisted of two lessons and a pretest. In the first lesson, the students worked on the topic of buoyancy in three experiments. Each experiment included four phases, namely setting up hypotheses, designing experiments, making conclusions and reflecting on the experiment on the basis of discussion questions. The second lesson was on the topic of Archimedes' principle.
Implemented online labs	Splash

Learning outcomes	No significant relation could be found between the prior knowledge and performance on hypothesis generation. Also no relationship was found between the score on the sub-test 'Setting up Hypotheses' of the inquiry skills test and the performance on hypothesis generation.
Photos or other relevant material	http://graasp.eu/ils/56d5beb95829e7041c10085a/?lang=nl http://graasp.eu/ils/56d96d8a5829e7041c100a1e/?lang=nl 

G O - L A B Report Code	[NL01-01052016]
Title	Misconceptions about Newton's first law
Country City/Region	The Netherlands, Apeldoorn
Working language	Dutch
Start/End Date	May 2016
Partners Involved	UT
Coordinator name and email	Henny Leemkuil, h.h.leemkuil@utwente.nl
School Profile	Veluwscollege Mheenpark and Veluwscollege Walterbosch
Number and age of students	183 third grade students of a school at the HAVO (Higher General Secondary Education) and VWO (Pre-university education) level in The Netherlands

Activity Description	Four different conditions were compared, namely: 1. hands-on lessons, 2. online lessons, 3. online lesson and then hands-on lesson and 4. hands-on lesson and then online lesson. All the conditions consisted of two lessons.
Implemented online labs	Phet - Energy - Skate Park Basics
Learning outcomes	This study showed that no method or combination of methods was superior to another for student's performances and confidence about Newton's firs law and altering students' science curiosity.
Photos or other relevant material	http://graasp.eu/ils/56b5f2a92aec72857324571f/?lang=nl http://graasp.eu/ils/56b5ece72aec72857324571e/?lang=nl. 

G O - L A B Report Code	[NL01-16052016]
Title	3 ILS's about electricity
Country City/Region	The Netherlands, Tubbergen
Working language	English
Start/End Date	May
Partners Involved	University of Twente
Coordinator name and email	Henny Leemkuil, h.h.leemkuil@utwente.nl

School Profile	Pre-university level, Canisius R.K. scholengemeenschap
Number and age of students	22 students, 12-14 years old
Activity Description	3 ILS's in which students use the Electrical circuit lab
Implemented online labs	Electrical circuit lab
Learning outcomes	
Photos or other relevant material	http://graasp.eu/ils/5707ac3cc3ddb608c844ad7e/?lang=en http://graasp.eu/ils/5707b3b7c3ddb608c844ad82/?lang=en http://graasp.eu/ils/57148ec5c3ddb608c844b21e/?lang=en

II.7 Portugal

G O - L A B Report Code	PT19241015
Title	Workshop Setúbal
Country City/Region	Portugal / Lisboa
Working language	Portuguese
Start/End Date	24/10/2015 - 24/10/2015
Partners Involved	NUCLIO
Coordinator name and email	Rosa Doran / rosa.doran@nuclio.pt
Number of teachers	15 (teachers) from 12 schools
Activity Description	This is a workshop promoting the use of modern tools and resources for science education. Several Go-lab tools are presented. An entire section is devoted to IBSE and the creation of ILS.
Implemented online labs	Salsa J, Sun4all, Faulkes Telescope. Other virtual labs are also presented (Stellarium, Celestia, Google Earth and WWT)
Learning outcomes	This workshop introduced teachers to the methodology of Inquiry Based Science Education (IBSE) and e-Learning platforms. Participants created their Graasp accounts, copied and created their own ILS

G O - L A B Report Code	PT19191015
Title	Poland GTTP in Portugal
Country City/Region	Portugal / Lisboa

Working language	English
Start/End Date	19/10/2015 - 23/10/2015
Partners Involved	NUCLIO
Coordinator name and email	Rosa Doran / rosa.doran@nuclio.pt
Number of teachers	10 (teachers) from 6 schools
Activity Description	This was a workshop promoting the use of modern tools and resources for science education. Several Go-lab tools were presented. An entire section is devoted to IBSE and the creation of ILS. Teachers had the opportunity to explore Golabz portal, to copy ILSs and create their own ILS.
Implemented online labs	Salsa J, Sun4all, Faulkes Telescope. Other virtual labs are also presented (Stellarium, Celestia, Google Earth and WWT)
Learning outcomes	This teachrees came from a school in Poland where they are willing to introduce changes and innovation (The same school invited us to visite their school in Poland and 2 teachers participated in the contest and are going to the summer school 2016)
Photos or other relevant material	https://goo.gl/photos/qdnhfKBKTVk5NEEp9

G O - L A B Report Code	PT19280116
Title	Go-Lab na Secundária Carlos Gargaté
Country City/Region	Portugal / Corroios
Working language	Portuguese
Start/End Date	28/01/2016 - 29/01/2016 e 18/02/2016
Partners Involved	NUCLIO
Coordinator name and email	Rosa Doran / rosa.doran@nuclio.pt
School Profile	Escola Secundária Carlos Gargaté
Number of teachers	15 teachers from about 10 schools
Activity Description	Training workshop for secondary school teachers. They were introduced to IBL and Golabs
Implemented online labs	Salsa J, Sun4all, Faulkes Telescope. Other virtual labs are also presented (Stellarium, Celestia, Google Earth and WWT)
Learning outcomes	Teachers explored the platform and created their own ILSs following examples found in Golabz. They used the platform as students first, by using the Craters impact ILS and then created their own.

Photos or other relevant material	https://goo.gl/photos/CrTv2PHD5Frf6vgC7

G O - L A B Report Code	PT19150116
Title	Go-Lab Recording
Country City/Region	Portugal / Águeda
Working language	Portuguese
Start/End Date	15/01/2016 - 15/01/2016
Partners Involved	NUCLIO, EPFL
Coordinator name and email	Rosa Doran / rosa.doran@nuclio.pt
School Profile	Escola Secundária Adolfo Portela
Number and age of students	20 students (15-17)
Activity Description	This is implementation of one ILS in the schools and a video recording about student's opinion.
Implemented online labs	Salsa J, Sun4all, Faulkes Telescope. Other virtual labs are also presented (Stellarium, Celestia, Google Earth and WWT)
Learning outcomes	Students' opinion about Go-Lab and ILS scenarios.
Photos or other relevant material	https://goo.gl/photos/rCkQzrQHqGNQcaJ26

G O - L A B Report Code	PT19160216
Title	NOR Escola D.Maria II
Country City/Region	Portugal / Torres Novas
Working language	Portuguese
Start/End Date	16/02/2016 - 16/02/2016
Partners Involved	NUCLIO
Coordinator name and email	Rosa Doran / rosa.doran@nuclio.pt
School Profile	Secondary School
Number and age of students	5 teachers + 30 students

Activity Description	This workshop had a specific purpose of engaging a group of students in a real research experiment. Students participated in the Black Holes in my School project where they used a specific ILS produced for this purpose
Implemented online labs	Salsa J, Faulkes Telescope
Learning outcomes	Participants had the opportunity to build a light curve of a stellar mass black hole candidate and learn how scientists determine the mass of a compact object using Newton and Kepler's laws.
Photos or other relevant material	https://goo.gl/photos/MftQQAaFhUuMQVtn9

G O - L A B Report Code	PT19290216
Title	NoR Colégio Cedros
Country City/Region	Portugal / Porto
Working language	Portuguese
Start/End Date	29/02/2016 - 29/02/2016
Partners Involved	NUCLIO
Coordinator name and email	Rosa Doran / rosa.doran@nuclio.pt
School Profile	Colégio Cedros
Number and age of students	2 teachers + 30 students
Activity Description	This was a talk and implementation with students promoting the scientific method by use of modern tools and resources for science education. The ILS implemented used IBSE. Implementation of Black Holes ILS.
Implemented online labs	ILS: Black Holes in My School http://www.golabz.eu/spaces/bhims We used Salsa J, Faulkes Telescope and Stellarium.
Learning outcomes	With this workshop students were able to strengthen their knowledge in astronomy; they used remote telescopes (Faulkes Telescope), software analysis of astronomical data (SalsaJ and astrometric), database of real observations.
Photos or other relevant material	http://www.colegiocedros.pt/download/file/pt/231/51a034219ade4992cc8c6010d4f40cd8/20160229-0305%20Semana%20da%20Ci%C3%AAncia%20-%20Programa%202016.pdf https://goo.gl/photos/uRxGxq83giC6aifj8

G O - L A B Report Code	PT19050216
Title	Laboratórios On-Line Go-Lab I - Funchal

Country City/Region	Portugal / Funchal
Working language	Portuguese
Start/End Date	05/02/2016 - 10/02/2016
Partners Involved	NUCLIO
Coordinator name and email	Rosa Doran / rosa.doran@nuclio.pt
School Profile	Escola Básica Dr. Horácio Bento de Gouveia,
Number of teachers	16 teachers from 9 schools
Activity Description	This was a teacher training promoting the use of modern tools and resources for science education. Several Go-lab tools were presented. An entire section was devoted to IBSE, the creation and implementation of ILS.
Implemented online labs	Salsa J, Sun4all, Faulkes Telescope. Other virtual labs were also presented (Stellarium, Celestia, Google Earth and WWT)
Learning outcomes	With this training teachers were able to strengthen their knowledge in astronomy; they also got to learn how to use the online lab resources of the project: "Global Online Science Learning Labs for Inquiry at School" (GO-LAB), including: remote telescopes (Faulkes Telescope), software analysis of astronomical data (SalsaJ and astrometric), database of real observations (pictures of the Sun's Sun4All); The teachers also were able to use the methodology Inquiry Based Science Education (IBSE) and e-Learning platforms. Participants created their Graasp accounts and their own ILS
Photos or other relevant material	http://funchalnoticias.net/2016/02/15/laboratorios-on-line-para-astronomia-go-lab-i/ http://nuclio.org/blog/laboratorios-on-line-para-a-astronomia-go-lab-i-funchal-fev-2016/ https://goo.gl/photos/KyabpbjpPZ8gp4nk7

G O - L A B Report Code	PT19160216
Title	NoR Escola Básica Manuel Figueiredo
Country City/Region	Portugal / Torres Novas
Working language	Portuguese
Start/End Date	16/02/2016 - 16/02/2016
Partners Involved	NUCLIO
Coordinator name and email	Rosa Doran / rosa.doran@nuclio.pt
School Profile	Escola Básica Manuel Figueiredo,

Number and age of students	3 teachers + 30 students
Activity Description	This workshop had a specific purpose of engaging a group of students in a real research experiment. Students participated in the Black Holes in my School project where they used a specific ILS produced for this purpose
Implemented online labs	Salsa J, Faulkes Telescope
Learning outcomes	Participants had the opportunity to build a light curve of a stellar mass black hole candidate and learn how scientists determine the mass of a compact object using Newton and Kepler's laws.
Photos or other relevant material	https://goo.gl/photos/FtSwJb238UcJL2Bw6

G O - L A B Report Code	PT19170216
Title	Go-Lab na Secundária Seomara Costa Primo
Country City/Region	Portugal / Amadora
Working language	Portuguese
Start/End Date	17/02/2016 - 27/02/2016 – 2/3/2016 – 5/3/2016
Partners Involved	NUCLIO
Coordinator name and email	Rosa Doran / rosa.doran@nuclio.pt
School Profile	Escola Secundária Seomara Costa Primo
Number of teachers	15 teachers from 10 schools
Activity Description	This was a workshop promoting the use of modern tools and resources for science education. Several Go-lab tools were presented. An entire section is devoted to IBSE, the creation and implementation of ILS. We applied the "Black Holes" ILS.
Implemented online labs	Salsa J, Sun4all, Faulkes Telescope. Other virtual labs are also presented (Stellarium, Celestia, Google Earth and WWT)
Learning outcomes	With this workshop teachers were able to strengthen their knowledge in astronomy; they also got to learn how to use the online lab resources of the project: "Global Online Science Learning Labs for Inquiry at School" (GO-LAB), including: remote telescopes (Faulkes Telescope), software analysis of astronomical data (SalsaJ and astrometric), database of real observations (pictures of the Sun's Sun4All); The teachers also were able to use the methodology Inquiry Based Science Education (IBSE) and e-Learning platforms. Participants created their Graasp accounts and their own ILS
Photos or other relevant material	https://goo.gl/photos/1dCbaoPKDnuGmEWy8

G O - L A B Report Code	PT19180316
Title	Go-Lab na Escola Sobral de Monte Agraço
Country City/Region	Portugal / Torres Vedras
Working language	Portuguese
Start/End Date	18/03/2016 - 18/03/2016
Partners Involved	NUCLIO
Coordinator name and email	Rosa Doran / rosa.doran@nuclio.pt
School Profile	Escola Sobral de Monte Agraço
Number and age of students	1 teachers + 40 students
Activity Description	This was an implementation activity with students promoting the scientific method by use of modern tools and resources for science education. The ILS implemented used IBSE. Implementation of Ohm's Law.
Implemented online labs	ILS: http://www.golabz.eu/spaces/lei-de-ohm-e-circuitos-simples
Learning outcomes	With this workshop students were able to strengthen their knowledge in electricity; the relations between the different Physics quantities.
Photos or other relevant material	 

G O - L A B Report Code	PT19290216
Title	Colegio Corazón de María
Country City/Region	Gijon/Spain
Working language	English
Start/End Date	01/03/2016
Partners Involved	NUCLIO/EPFL

Coordinator name and email	Rosa Doran / rosa.doran@nuclio.pt
School Profile	Colegio Corazon de Maria
Number of teachers, students	20 teachers + 30 students
Activity Description	The initial event was a talk and implementation with students promoting the scientific method by use of modern tools and resources for science education. Implementation of Black Holes ILS. The second event was a workshop for teachers introducing them to Golabz and Graasp. They had the opportunity to use and copy an ILS (Astronomy and Astrology)
Implemented online labs	ILS: Black Holes in My School ILS: Astronomy and Astrology Online labs Salsa J, Faulkes Telescope and Stellarium.
Learning outcomes	Students had the opportunity to build a light curve of a stellar mass black hole candidate and learn how scientists determine the mass of a compact object using Newton and Kepler's laws. Teachers had the opportunity to experiment and get started on the use of Go-lab authoring tool.
Photos or other relevant material	https://goo.gl/photos/aposuRMhU5iSUbbU9 https://photos.google.com/photo/AF1QipMIwA8tYYYxo9OEkVytnf4QElcvh0Ic8lFoOd-l?hl=pt-PT

G O - L A B Report Code	PT19130316
Title	Go-Lab Principe
Country City/Region	São Tomé e Principe
Working language	Portuguese
Start/End Date	13-3-2016
Partners Involved	NUCLIO
Coordinator name and email	Rosa Doran / rosa.doran@nuclio.pt
School Profile	
Number of teachers, students	6 teachers and 6 students
Activity Description	The scenario "Black Holes in My School" was implemented in the workshop with students where they had the opportunity to work with Salsa J and explore Golabz
Implemented online labs	Black Holes in my School

Learning outcomes	The teachers learned how to engage the students and motivate them to the investigation by using an IBSE scenario They followed the inquiry scenario made in the ISE platform and they saw how to pause the lesson and followed the statistics The students got involved in a scientific task, following the inquiry methodology.
Photos or other relevant material	https://goo.gl/photos/gt5DxBZbGuohr7yQ7

II.8 Spain

G O - L A B Event Code	ES12- 2015-2016
Title	Inquiry Learning Space in Go-Lab format
Country City/Region	Bilbao, Spain
Working language	Spanish
Start/End Date	09/09/2015 – 20/06/2016
Organizing Institute	University of Deusto
Coordinator name and email	Iratxe Mentxaka Sierra iratxe.mentxaka@deusto.es Javier Garcia-Zubia zubia@deusto.es
Activity Form	7 ONLINE Workshops
Activity Type	Online local activities
Total number of teachers/schools	Overall 70 secondary and primary school teachers from about 50 schools
Implemented online labs	Usually we used two online labs: Archimedes (remote) Splash (virtual)
Brief description	During 2 hours activity the Go-Lab tools, features and services were promoted, the ILSs with integrated virtual and remote experiments were presented to the school teachers. Main steps on the ILS adaptation and development were showed. Each session was completed with the answering on the teachers' questions.
Learning outcomes	The goal of this workshop is to promotion Go-Lab products (Apps, Lab and ILS) to school teachers in Spain, encourage teachers to use ILS in class instruction, demonstrate the Go-Lab tools implementation in school class.
Event agenda	9 Sept. 2015: FUNDACION EDUCATIVA ACI 23 Sept. 2015: 1º session open for call 1 4 Nov. 2015: 1º session open for call 2 3 Dec. 2015: 2º session for call 1 20 Jan.2016: 2º session for call 2

	17 Feb. 2016: 3º session for call 1 & 2 20 June 2016: summative workshop with most active teachers participated in online workshops Session of 2 hours: Introduction of the GoLab instruments updates, Go-Lab portal new features and services 5 steps of inquiry circle incorporated in ILS and ILS development Discussion and answering the questions

G O - L A B Event Code	ES12- 18022016
Title	Go-Lab Inquiry Learning Space in classroom
Country City/Region	Bilbao, Spain
Working language	Spanish
Start/End Date	14 January 2016, 15:30 - 19:00h 21 January 2016, 15:30 - 19:00h 18 February 2016, 15:30 - 19:00h
Organizing Institute	University of Deusto and Berritzegune (Innovation department of Education Ministry, Basque)
Coordinator name and email	Iratxe Mentxaka Sierra iratxe.mentxaka@deusto.es Javier García-Zubía zubia@deusto.es
Activity Form	Professional Development Workshops (Prest Gara)
Activity Type	Local activities
Total number of teachers/schools	14 secondary school teachers from about 10 schools
Implemented online labs	Different online laboratories selected by a teacher
Brief description	The set of workshops is covered all aspects of the Go-Lab project: Apps, Labs and ILS Inquiry based learning (IBL) and 5 steps circle How to design lesson plan and convert it to ILS Which Go-Lab instruments fit to ILS How to use Help facility of the Go-Lab platform Support your community
Learning outcomes	The goal of this action s to introduce Go-Lab products (Apps, Lab and ILS) teachers, describe the IBL, encourage them to adapt, create and use ILS in class instruction, demonstrate the Go-Lab tools implemented..

Photos or other relevant material	
Event agenda	Session (14 enero 2016): Introduction Go-Lab project: goals, task, target groups, instruments Presentation of platforms available for teachers/students use Use Help facilities Session (21 enero 2016) Apps, Labs and ILSs Presentation by teachers their lessons plan Starting implementation them Go-Lab community Session (18 febrero 2016) Presentation ILS by Teachers Comments and feedback about the instruments Plan of ILS implementation in a classroom

G O - L A B Event Code	ES12-16052016 (1)
Title	Go-Lab Inquiry Learning Space
Country City/Region	Bilbao, Spain
Working language	Spanish
Start/End Date	16/05/2016, 9:30-11:30
Organizing Institute	University of Deusto
Coordinator name and email	Iratxe Mentxaka Sierra iratxe.mentxaka@deusto.es Olga Dziabenko olga.dziabenko@deusto.es
Activity Form	Students Workshop
Activity Type	Local activities
Total number of teachers/schools	37 students of 6EP level of the COLEGIO EL SALVADOR MARISTAS (Bilbao)

Implemented online labs	Faraday's Law (PhET)
Brief description	During 2 hours activity the ILS was presented to students. The main tasks were described. After the presentation students performed the 2 steps of inquiry starting with the hypothesis formulation, over the investigation to discussion phase.
Learning outcomes	The goal of this workshop is to introduce Go-Lab products (Apps, Lab and ILS) directly to the main users – school students, encourage teachers to use ILS in class instruction, demonstrate the Go-Lab tools implementation in primary school class.
Photos or other relevant material	
Event agenda	Session (16/05/2016) Introduction of the GoLab instruments Performance the ILS "Experimento de Faraday : El electromagnetismo" Discussion with students their experience

G O - L A B Event Code	ES12-16052016 (2)
Title	Go-Lab Inquiry Learning Space
Country City/Region	Bilbao, Spain
Working language	Spanish
Start/End Date	16/05/2016, 11:30-13:30
Organizing Institute	University of Deusto
Coordinator name and email	Iratxe Mentxaka Sierra iratxe.mentxaka@deusto.es Oihane Zarate oihane.zarate@opendeusto.es
Activity Form	Students Workshop
Activity Type	Local activities
Total number of teachers/schools	37 students of 6EP level of the COLEGIO EL SALVADOR MARISTAS (Bilbao)

Implemented online labs	Faraday's Law (PhET)
Brief description	During 2 hours activity the ILS was presented to students. The main tasks were described. After the presentation students performed the 2 steps of inquiry starting with the hypothesis formulation, over the investigation to discussion phase.
Learning outcomes	The goal of this workshop is to introduce Go-Lab products (Apps, Lab and ILS) directly to the main users – school students, encourage teachers to use ILS in class instruction, demonstrate the Go-Lab tools implementation in primary school class.
Photos or other relevant material	
Event agenda	Session (16/05/2016) Introduction of the GoLab instruments Performance the ILS "Experimento de Faraday : El electromagnetismo" Discussion with students their experience

G O - L A B Event Code	ES12-17052016
Title	Go-Lab Inquiry Learning Space
Country City/Region	Bilbao, Spain
Working language	Spanish
Start/End Date	17/05/2016, 10:30 – 12:30
Organizing Institute	University of Deusto
Coordinator name and email	Iratxe Mentxaka Sierra iratxe.mentxaka@deusto.es Oihane Zarate oihane.zarate@opendeusto.es
Activity Form	Students Workshop
Activity Type	Local activities
Total number of teachers/schools	25 students of 6EP level of the Colegio San Félix de Cantalicio (Bilbao)

Implemented online labs	Faraday's Law (PhET)
Brief description	During 2 hours activity the ILS was presented to the primary school students. The main tasks that they should perform were described. After the presentation students performed the 2 steps of inquiry starting with the hypothesis formulation, over the investigation to discussion phase.
Learning outcomes	The goal of this workshop is to introduce Go-Lab products (Apps, Lab and ILS) directly to the main users – school students, encourage teachers to use ILS in class instruction, demonstrate the Go-Lab tools implementation in primary school class.
Photos or other relevant material	
Event agenda	Session (17/05/2016) Introduction of the GoLab instruments Performance the ILS "Experimento de Faraday : El electromagnetismo" Discussion with students their experience

G O - L A B Event Code	ES12-18052016 (1)
Title	Go-Lab Inquiry Learning Space
Country City/Region	Bilbao, Spain
Working language	Spanish
Start/End Date	18/05/2016, 9:30 – 11:30
Organizing Institute	University of Deusto
Coordinator name and email	Iratxe Mentxaka Sierra iratxe.mentxaka@deusto.es Oihane Zarate oihane.zarate@opendeusto.es
Activity Form	Students Workshop
Activity Type	Local activities

Total number of teachers/schools	25 students of 6EP level of the Colegio San Félix de Cantalicio (Bilbao)
Implemented online labs	Faraday's Law (PhET)
Brief description	During 2 hours activity the ILS was presented to the primary school students. The main tasks that they should perform were described. After the presentation students performed the 2 steps of inquiry starting with the hypothesis formulation, over the investigation to discussion phase.
Learning outcomes	The goal of this workshop is to introduce Go-Lab products (Apps, Lab and ILS) directly to the main users – school students, encourage teachers to use ILS in class instruction, demonstrate the Go-Lab tools implementation in primary school class.
Photos or other relevant material	
Event agenda	Session (18/05/2016) Introduction of the GoLab instruments Performance the ILS "Experimento de Faraday : El electromagnetismo" Discussion with students their experience

G O - L A B Event Code	ES12- 20/04/2016 (1)
Title	Go-Lab Inquiry Learning Space
Country City/Region	Bilbao, Spain
Working language	Spanish
Start/End Date	20/04/2016, 9:30 – 11:30
Organizing Institute	University of Deusto
Coordinator name and email	Iratxe Mentxaka Sierra iratxe.mentxaka@deusto.es Oihane Zarate oihane.zarate@opendeusto.es
Activity Form	Students Workshop

Activity Type	Local activities
Total number of teachers/schools	25 students of 6EP level of the Colegio Público Kanpazar (Portugalete)
Implemented online labs	Faraday's Law (PhET)
Brief description	During 2 hours activity the ILS was presented to the primary school students. The main tasks that they should perform were described. After the presentation students performed the 2 steps of inquiry starting with the hypothesis formulation, over the investigation to discussion phase.
Learning outcomes	The goal of this workshop is to introduce Go-Lab products (Apps, Lab and ILS) directly to the main users – school students, encourage teachers to use ILS in class instruction, demonstrate the Go-Lab tools implementation in primary school class.
Photos or other relevant material	
Event agenda	Session (20/05/2016) Introduction of the GoLab instruments Performance the ILS "Experimento de Faraday : El electromagnetismo" Discussion with students their experience

G O - L A B Event Code	ES12- 20/04/2016 (2)
Title	Go-Lab Inquiry Learning Space
Country City/Region	Bilbao, Spain
Working language	Spanish
Start/End Date	20/04/2016, 11:45 – 14:00
Organizing Institute	University of Deusto

Coordinator name and email	Iratxe Mentxaka Sierra iratxe.mentxaka@deusto.es Oihane Zarate oihane.zarate@opendeusto.es
Activity Form	Students Workshop
Activity Type	Local activities
Total number of teachers/schools	25 students of 6EP level of the Colegio Público Kanpazar (Portugalete)
Implemented online labs	Faraday's Law (PhET)
Brief description	During 2 hours activity the ILS was presented to the primary school students. The main tasks that they should perform were described. After the presentation students performed the 2 steps of inquiry starting with the hypothesis formulation, over the investigation to discussion phase.
Learning outcomes	The goal of this workshop is to introduce Go-Lab products (Apps, Lab and ILS) directly to the main users – school students, encourage teachers to use ILS in class instruction, demonstrate the Go-Lab tools implementation in primary school class.
Photos or other relevant material	
Event agenda	Session (20/05/2016) Introduction of the GoLab instruments Performance the ILS "Experimento de Faraday : El electromagnetismo" Discussion with students their experience

II.9 UK

G O - L A B Event Code	UK25042016
Title	Teacher Training
Country City/Region	Cardiff, Wales
Working language	English

Start/End Date	25th April 2016
Organizing Institute	Cardiff University/ Faulkes Telescopes
Coordinator name and email	Fraser Lewis - fraser.lewis68@gmail.com
Activity Form	Teacher Training
Activity Type	Local Event held at Cardiff Metropolitan University with their trainee (PGCE) teachers
Total number of teachers/schools	6 teachers
Implemented online labs	Salsa J, Faulkes Telescopes, Impact Calculator
Brief description	Afternoon event showcasing online and hands-on activities for students and pupils in astronomy, planetary and space science
Learning outcomes	Workshop for teachers to demonstrate projects such as Go-Lab and promote the use of modern tools for science teaching and the methodology involved in the project. Teachers were invited to navigate on the Go-Lab portal, create an account on Graasp and explore the different tools and labs.

G O - L A B Event Code	UK14062016
Title	Teacher Training - Space as a Context for Teaching Science
Country City/Region	Didcot, England
Working language	English
Start/End Date	14th June 2016
Organizing Institute	Cardiff University/ Faulkes Telescopes
Coordinator name and email	Fraser Lewis - fraser.lewis68@gmail.com
Activity Form	Teacher Training
Activity Type	Local Event held at Rutherford Appleton Laboratory in conjunction with the ESA Gaia mission, University of Cambridge, ESERO-UK and STFC

Total number of teachers/schools	12 teachers from about 5 schools
Implemented online labs	Salsa J, Faulkes Telescopes, Impact Calculator
Brief description	Three day event showcasing the ESA Gaia mission as well as online and hands-on activities for students and pupils in astronomy, planetary and space science http://www.faulkes-telescope.com/news/2668
Learning outcomes	Workshop for teachers to demonstrate projects such as Go-Lab and promote the use of modern tools for science teaching and the methodology involved in the project. Teachers were invited to navigate on the Go-Lab portal, create an account on Graasp and explore the different tools and labs.

G O - L A B Event Code	UK20062016
Title	Teacher Training
Country City/Region	Belfast, Northern Ireland
Working language	English
Start/End Date	20th June 2016
Organizing Institute	Cardiff University/ Faulkes Telescopes
Coordinator name and email	Fraser Lewis - fraser.lewis68@gmail.com
Activity Form	Teacher Training
Activity Type	Local
Total number of teachers/schools	15 teachers from about 7 schools
Implemented online labs	Salsa J, Faulkes Telescopes
Brief description	Day-long event showcasing online and hands-on activities for students and pupils in astronomy, planetary and space science http://www.faulkes-telescope.com/news/2669
Learning outcomes	Workshop for teachers to demonstrate projects such as Go-Lab and promote the use of modern tools for science teaching and the methodology involved in the project. Teachers were invited to navigate on the Go-Lab portal, create an account on Graasp and explore the different tools and labs.

G O - L A B Event Code	UK12072016
Title	Teacher Training
Country City/Region	Cardiff, Wales
Working language	English
Start/End Date	12th July 2016
Organizing Institute	Cardiff University/ Faulkes Telescopes
Coordinator name and email	Fraser Lewis - fraser.lewis68@gmail.com
Activity Form	Teacher Training
Activity Type	Local
Total number of teachers/schools	12 teachers
Implemented online labs	Salsa J, Faulkes Telescopes, Impact Calculator
Brief description	Day-long event showcasing online and hands-on activities for students and pupils in astronomy, planetary and space science http://www.faulkes-telescope.com/news/2676
Learning outcomes	Workshop for teachers to demonstrate projects such as Go-Lab and promote the use of modern tools for science teaching and the methodology involved in the project. Teachers were invited to navigate on the Go-Lab portal, create an account on Graasp and explore the different tools and labs.

II.10 Other countries

(Americas, France, Poland, Romania, Serbia)

G O - L A B Report Code	PT19030815
Title	Global Hands On Universe 2015
Country City/Region	United States of America / Hawaii
Working language	English
Start/End Date	03/08/2015 - 08/08/2015
Partners Involved	NUCLIO

Coordinator name and email	Rosa Doran / rosa.doran@nuclio.pt
School Profile	GHOU
Number of teachers	20 teachers from about 10 schools
Activity Description	This was a special training workshop for Hawaian teachers. Several Go-lab tools are presented. An entire section is devoted to IBSE and the creation of ILS.
Implemented online labs	Salsa J, Sun4all, Faulkes Telescope. Other virtual labs are also presented (Stellarium, Celestia, Google Earth and WWT)
Learning outcomes	With this training the teachers are able to strengthen their knowledge in astronomy; they also get to learn how to use the online lab resources of the project: "Global Online Science Learning Labs for Inquiry at School" (GO-LAB), including: remote telescopes (Faulkes Telescope), software analysis of astronomical data (SalsaJ and astrometric), database of real observations (pictures of the Sun's Sun4All); The teachers also are able to use the methodology Inquiry Based Science Education (IBSE) and e-Learning platforms. Participants created their Graasp accounts and their own ILS
Photos or other relevant material	https://goo.gl/photos/Nyk7Kk2R3XVasgSb9

G O - L A B Report Code	PT19231115
Title	ESA International Teacher Training 2015
Country City/Region	The Netherlands, Noordwijk
Working language	English
Start/End Date	23/11/2015 - 27/11/2015
Partners Involved	NUCLIO, University of Cardiff, ESA
Coordinator name and email	Rosa Doran / rosa.doran@nuclio.pt
Number of teachers	20 teachers
Activity Description	Participants at this workshop had the chance to explore innovative ways to use space science and astronomy in the classroom to engage students in the sciences. Teachers attending were presented with a diverse workshop programme consisting of practical sessions, and lectures from ESA experts. Cosmic light was one of the main topics in celebration of the International Year of Light. Golab was one of the highlight programs.
Implemented online labs	Salsa J, World Wide Telescope, Faulkes Telescope, SOHO
Learning outcomes	Teachers participating in this training had the chance to work with a scenario devoted to promote real research in classroom (“Black Holes in My School”). They learned how to build a light curve of a stellar mass black hole. They were

	also presented to the Impact Calculator and worked with the ILS including this lab.
Photos or other relevant material	https://storify.com/atiseret/galileo-teacher-trainning-program https://goo.gl/photos/TBbRkMNiFd9F3kkz5

G O - L A B Report Code	PT19101215
Title	GTTP in Romania
Country City/Region	Romania, Craiova
Working language	English
Start/End Date	10/12/2015 - 13/12/2015
Partners Involved	EA, NUCLIO
Coordinator name and email	Rosa Doran / rosa.doran@nuclio.pt
Number of teachers	20 teachers from about 15 schools
Activity Description	This workshop was organized in partnership with the University of Craiova. Around 20 teachers participated in the training. Teachers came from different schools, from different parts of the country.
Implemented online labs	Salsa J, Sun4all, Faulkes Telescope. Other virtual labs are also presented (Stellarium, Celestia, Google Earth and WWT)
Learning outcomes	Teachers were introduced to the IBL methodology, had the opportunity to explore Golabz and play with several labs. They have used 2 ILSs in the role of students (Craters on Earth and Astronomy and Astrology). Later they had the opportunity to copy and create their own ILSs,
Photos or other relevant material	https://www.facebook.com/galileoteachers/posts/1215477958466291 https://goo.gl/photos/UMC9KDZRHm34W4Zq7

G O - L A B Event Code	[INTEUN-150216]
Title	Go-Lab introductory online workshop
Country City/Region	Online: BE/NL, CR, EN, NT, IT, FR
Working language	English, Dutch, Croatian, French, Italian
Start/End Date	03022016 - 15022016

Organizing Institute	European Schoolnet
Coordinator name and email	Teodora Ioan teodora.ioan@eun.org Victor Perez victor.perez@eun.org Evita Tasiopoulou evita.tasiopoulou@eun.org
Activity Form	Online introductory session with Go-Lab teachers
Activity Type	Online session with older Go-Lab teachers as facilitators, in their native language, for new Go-Lab teachers
Total number of teachers/schools	25 in total
Implemented online labs	Teachers presented and demonstrated online labs and ILSs of their choosing
Brief description	The aim of the workshop was to introduce new Go-Lab teachers or older but more inexperienced Go-Lab teachers, to the use of online laboratories, Inquiry Learning Spaces, present them the advantages of introducing their use in their lessons and schools and introduce them to Go-Lab, Golabz and the possibilities available by teachers in their own country or speaking their own national language. The rationale, as demonstrated also in the success on the workshops, was that teachers would be more willing to use Go-Lab if and when presented by someone they can easily relate to (a fellow teacher colleague) or understand better from (someone speaking their national language). The session started with a brief presentation of the Go-Lab project, follow by an exploration of Golabz (examples of existing ILSs, online labs and apps) and an investigation of these can be applied to lessons. Besides the Go-Lab apps, labs and ILSs presented, participants also saw and understoond more about: Go-Lab dissemination activities; Types of Go-Lab support (Forum, MOOCs, etc.) Go-Lab evaluation activities; A Q& A session;
Learning outcomes	After following this workshop, teachers have learnt the following: The advantages of using online laboratories What are the main aims of Go-Lab The variety of resources/activities they can find and use in Golabz What is an ILS and how they can use it The type of support Go-Lab offers The evaluation of the project and teacher involvement
Photos or other relevant material	FR Session

	 IT session 
Event agenda	What is Go-Lab? Activities in the project Inquiry Learning Spaces (ILS) Graasp Questionnaires (why and when) Support Your questions

G O - L A B Report Code	PT19110416
Title	Go-Lab Poland
Country City/Region	Poland, Krakow
Working language	English
Start/End Date	11/04/2016 - 13/04/2016
Partners Involved	NUCLIO

Coordinator name and email	Rosa Doran / rosa.doran@nuclio.pt
Number of teachers	20 teachers from about 15 schools
Activity Description	The workshop had the aim to explain to teachers how to use the platform, create ILS in Graasp adding Labs and Apps, how to use the scenarios with students, and publish to the website. These teachers had previously been to Portugal for a training on Golab.
Implemented online labs	Impact Calculator, World Wide Telescope, Faulkes Telescope
Learning outcomes	Engage the teachers to implement inquiry in their own classes by using the Go-Lab's ILS environment. Copy and edit ILSs. Share the ILS with other colleagues. How to incorporate Labs and Apps in the ILS.
Photos or other relevant material	https://goo.gl/photos/FzgkSFRsyK2nJX2k7

G O - L A B Report Code	PT19110516
Title	Go-Lab Colombia
Country City/Region	Colombia (Bogota and Medellin)
Working language	Spanish
Start/End Date	10/05/2016 - 22/05/2016
Partners Involved	NUCLIO
Coordinator name and email	Rosa Doran / rosa.doran@nuclio.pt
Number of teachers	60 teachers from about 40 schools
Activity Description	The workshop had the aim to explain to teachers how to use the platform, create ILS in Graasp adding Labs and Apps, how to use the scenarios with students, and publish to the website. We implemented th ILS "Astronomy and Astrology" and Black Holes in My School
Implemented online labs	Salsa J, World Wide Telescope, Soho archives, Faulkes Telescope
Learning outcomes	Engage the teachers to implement inquiry in their own classes by using the Go-Lab's ILS environment. Copy and edit ILSs. Share the ILS with other colleagues. How to incorporate Labs and Apps in the ILS.
Photos or other relevant material	https://goo.gl/photos/Ev8ZcMdnHr1AFuKFA https://goo.gl/photos/GwqPhrhZtdXqDHtL9

G O - L A B Event Code	[FREUN-10062016]
Title	Go-Lab implementations at College Le Marin, Le Mans (FR)
Country City/Region	College Le Marin, Le Mans, France. http://clg-lemarin.sarthe.e-lyco.fr/
Working language	English/French
Start/End Date	27/05/2016 – 10/06/2016
Organizing Institute	European Schoolnet
Coordinator name and email	Teodora Ioan teodora.ioan@eun.org Enrique Martin enrique.martin@eun.org Evita Tasiopoulou evita.tasiopoulou@eun.org
Activity Form	In classroom implementations (2 with the same class)
Activity Type	In classroom implementations with 18 students.
Total number of teachers/schools	2 teachers, 18 students
Implemented online labs	Observation1: Climate Change – Greenhouse effect http://graasp.eu/spaces/5715d60290a9a86163dc0b92 Observation 2: http://graasp.eu/spaces/57547c3d616d921cbcd38b8b
Brief description	The implementations were organised in collaboration with the class teacher whose use of Go-Lab has been significant up to that point in time although not as advanced as he would like it to be. The implementations were also part of the WP8 case studies so the collection of qualitative and quantitative data, during the use of the Go-Lab ILS in the classroom, including: individual short teacher interviews per observation (pre and post), an observer sheet to be completed per observation, a final interview at the end of the second observation, a students' questionnaire and an interview with the Head of School were also organised. The items in students' questionnaire focused on students' attitudes and motivation towards STEM education.
Learning outcomes	The ILS acted as a tool to personalize the student work, enabling the teacher to help students individually. It also served as a great tool when switching from French to English during the lesson. All students were able to achieve the intended outcomes set by the teacher. Students enjoyed and were involved in the activity, even those with attention issues or behavioural problems were finally engaged and completed the ILSs

Photos or other relevant material	  
Observations	During both implementations the class was managed effectively, students participated and were supported equally, the small numbers of students also helped the class management. An issue that appeared constantly throughout the implementations was the time management habits that the teacher had. Classroom management and good behavioural teaching practices as a basis, are very important so that IBL can be properly applied and used with students (including the preparation of apps and computers before the lessons). The teacher insisted on the fact that even if it took him some time to find out how to use Go-Lab, how to search topics and how to create his own ILS, it was a great teaching tool to involve students and capture their attention (especially with those who have concentration problems in the classroom). According to both teacher and head of school, using new modes of teaching improved the attention of students. “For them, it’s like a game but behind that there is a pedagogical methodology that is efficient”. The existence of the Go-Lab portal has increased the interest of teachers and the implementation of IBSE especially in Technology. But still sometimes, the barrier of language is a problem to overcome.

G O - L A B Report Code	PT19290516
Title	Go-Lab Serbia
Country City/Region	Serbia, Nis + Belgrado + Panchebo
Working language	English
Start/End Date	29/05/2016 - 05/06/2016

Partners Involved	NUCLIO
Coordinator name and email	Rosa Doran / rosa.doran@nuclio.pt
Number of teachers	65 teachers from about 30 secondary schools
Activity Description	The workshop had the aim to explain to teachers how to use the platform, create ILS in Graasp adding Labs and Apps, how to use the scenarios with students, and publish to the website.
Implemented online labs	Salsa J, World Wide Telescope, Faulkes Telescope, SOHO archives
Learning outcomes	Engage the teachers to implement inquiry in their own classes by using the Go-Lab's ILS environment. Copy and edit ILSs. Share the ILS with other colleagues. How to incorporate Labs and Apps in the ILS.
Photos or other relevant material	https://goo.gl/photos/rXXTmqy3Yw5oJ4gd8

Annex III – Full report on the Go-Lab contest 2016

Introduction

The Go-Lab contest “Promoting Multidisciplinary science teaching” was launched in order to further disseminate the Go-Lab project and to increase teachers participation in the Go-Lab activities. The contest was launched on November 11th 2015 and the submission period ended on May 31st 2016. Teachers were asked to demonstrate who they used Go-Lab in their classroom. More specifically, the entries that were going to be submitted by the contestants had to follow three rules:

a. Implement an activity with a class of students between 10 and 18 years old in order to demonstrate to them the connection between two or more concepts or phenomena they learn about in different science classes. The activity can be either a Go-Lab activity or the Go-Lab "Big Ideas of Science" challenge.
b. Record the implementation process as well as students’ results and present them in the form of a report, or by making a video, a presentation or a poster.
c. Submit their presentation to the contest by the 30th of April, 2016.

The contest targeted teachers from all countries participating in the Go-Lab pilot phases. The teachers with the two winning entries from each country would be invited to attend the Go-Lab summer School in Marathon, Greece between the 3rd and 8th of July 2016.

The timetable of the contest was as follows:
November 11th, 2015: Launch of the contest
November 12th, 2015: Start of submission period
April 30th, 2016: End of submission period
May 31st, 2016: Announcement of winners per country
July 3rd - 8th, 2016: Summer School Dates

III.1 Contest set–up

The organization of the contest was made by Ellinogermaniki Agogi (EA). EA was responsible for setting-up the contest, producing all the necessary materials, gather the contestant’s entries and announce the results of the contest. It also acted as the main hub of communication for the contestants throughout the duration of the contest. The National Coordinators had the responsibility to evaluate the entries of their own country and report back to EA their results. All project partners were asked to disseminate the contest through all means possible.

III.2 Website

In order to better organize the contest, a separate website was created which aimed to provide all interested teachers with the necessary information as well as to keep them posted on all news related to the contest.

Figure 1. The website of the Go-Lab contest.

Through the website, teachers had access to the following information:
General Information http://golab.ea.gr/contest2016/content/general-information
Rules and Conditions http://golab.ea.gr/contest2016/content/rules-and-conditions
The prize http://golab.ea.gr/contest2016/content/prize
Contest Organizers http://golab.ea.gr/contest2016/content/contest-organizers
National Coordinators http://golab.ea.gr/contest2016/content/national-coordinators
List of labs available http://golab.ea.gr/contest2016/content/go-lab-online-labs
List of ILSs available http://golab.ea.gr/contest2016/content/go-lab-activities
Info about building an entry http://golab.ea.gr/contest2016/content/how-build-your-entry
Useful Tips http://golab.ea.gr/contest2016/content/useful-tips
Useful Resources http://golab.ea.gr/contest2016/content/useful-resources
Evaluation criteria http://golab.ea.gr/contest2016/content/evaluation-criteria
News http://golab.ea.gr/contest2016/articles
Contest Dissemination Materials http://golab.ea.gr/contest2016/content/contest-dissemination-materials
Calendar http://golab.ea.gr/contest2016/calendar/month
Contact persons http://golab.ea.gr/contest2016/content/contact
Frequently Asked Questions http://golab.ea.gr/contest2016/content/frequently-asked-questions

III.3 Dissemination

In addition to the website, a set of dissemination materials (Annex A) were produced to further disseminate the contest. These materials were used by project partners in the project's events so as to further disseminate the contest. The project's National Coordinators were the main hub of dissemination for each country. Aside from repeated e-mails to teachers, the contest was also communicated repeatedly through Facebook and Twitter and other websites.

Figure 2. Dissemination of the contest through Facebook.

III.4 Rules and Conditions

Within the framework of the preparation, a set of rules and conditions was also developed so as to ensure the smooth running of the contest. The rules and conditions can be found here: http://golab.ea.gr/contest2016/content/rules-and-conditions

III.5 Evaluation

National Coordinators were responsible for evaluating the entries coming from their own country. All National Coordinators followed the same evaluation criteria which are listed below:

1. Quality of the entry (10 points)

This criterion involves the evaluation of the quality of the entry in terms of results presented. Your entry can be in the form of a report, a presentation, a video or a poster.
Implementation process and students' results - 3 points
Overall assessment of students' performance - 3 points
Successful use of the Go-Lab "Big Ideas of Science" - 4 points

2. Practical Implementation in class (10 points)

This criterion involves the evaluation of the actual in-class implementation.
Encouraging students creativity - 3 points
Use of inquiry approach - 3 points
Degree of multidisciplinarity - 4 points

3. Creativity and Originality (10 points)

This criterion involves the evaluation of the entry in terms of creativity and originality. This incudes the degree to which the entry presents the results of the implementation in a clear, creative and attractive way.
Creative presentation - 4 points
Originality of the work - 3 points
Clarity of the overall entry - 3 points

4. Use of Go-Lab tools (5 points)

Contestants can use an existing Inquiry Learning Space as is. Alternatively they may adapt one or create a new one. Hence for every entry only one of the following options will be applicable.
Use of an existing Go-Lab Inquiry Learning Space as is. - 1 point
Use of an existing Go-Lab Inquiry Learning Space after being adapted by the contestant. - 3 points
Use of a Go-Lab Inquiry Learning Space created from the contestant from scratch. - 5 points
Use of the Go-Lab 'Big Ideas of Science' challenge - 5 points

Annex IV -–Contest Entries and Results

IV.1 Evaluation

Overall, 65 teachers registered to the contest. Out of these teachers, 30 submitted an entry by the end of the submission period. National Coordinators were asked to evaluate the entries of their country. The number of participants per country and their average scores respectively are as follows:

Table II.1. Participants and average scores per country.

Country	Number of Participants	Average Score (out of 35 points)
Belgium	1	31.00
Bulgaria	3	24.30
Cyprus	1	29.00
Estonia	2	26.50
Germany	1	26.00
Greece	2	34.00
Italy	1	30.00
Other Countries	4	30.25
Poland	2	25.50
Portugal	5	25.75
Romania	3	21.6
Spain	3	31.00
Switzerland	1	33.00
United Kingdom	1	30.00
Total	30	28.4

Compared to last year's contest the participation rate decreased from 49% to 59%. The detailed comparison is presented in the table below.

Table II.2. Comparison between 2016 and 2015 contest.

Country	Number of Participants 2015	Number of Registrations 2015	Participation Rate 2015	Number of Participants 2016	Number of Registrations 2016	Participation Rate 2016
Austria	0	1	0%	0	0	0%
Belgium	1	1	100%	1	1	100%
Bulgaria	1	2	50%	3	3	100%
Cyprus	3	3	100%	1	1	100%
Estonia	2	2	100%	2	4	50%
Germany	2	2	100%	1	2	50%
Greece	4	9	44%	2	7	29%
Italy	2	7	29%	1	4	25%
Other Countries	5	7	71%	4	17	24%

Country	Number of Participants 2015	Number of Registrations 2015	Participation Rate 2015	Number of Participants 2016	Number of Registrations 2016	Participation Rate 2016
Poland	2	2	100%	2	3	67%
Portugal	9	18	50%	5	9	55%
Romania	2	5	40%	3	8	38%
Spain	13	16	81%	3	4	75%
Switzerland	0	0	-	1	1	100%
The Netherlands	1	1	100%	0	0	-
United Kingdom	0	3	0%	1	1	100%
Total	47	79	59%	30	65	46%

IV.2 Entries

As mentioned above, this year's contest objective was to present how teachers used Go-Lab into their classroom. It is worth noticing that many participants decided to create their own Inquiry Learning Spaces. In particular, 13 contestants created their own ILSs and 11 of them modified an existing one. Some examples form the participants work are presented below:

Figure 3. Screenshot from Ille Kreos PowerPoint presentation entry.

Figure 4. Screenshot from Fernanda Freitas's PowerPoint presentation entry.

Figure 5. Screenshot form Kaie Ehrpais' video entry.

IV.3 Dissemination Materials

IV.4 Scores of the submitted entries

SURNAME	NAME	COUNTRY	ILS used	Total	Quality of the entry (10 points total)						Practical Implementation in class (10 points total)		Creativity and Originality (10 points total)		*Use of Go-Lab tools (5 points maximum) Please fill in ONLY ONE of the four boxes*	
					Implementation process and students' results	Overall assessment of students' performance	Successful use of the Go-Lab "Big Ideas of Science"	Encouraging students creativity	Use of inquiry approach	Degree of multidisciplinarity	Creative presentation	Originality of the work	Clarity of the overall entry	Use of an existing Go-Lab Inquiry Learning Space as is.	Use of an existing Go-Lab Inquiry Learning Space after being adapted by the contestant.	Use of a Go-Lab Inquiry Learning Space created from the contestant from scratch
					3 points max	3 points max	4 points max	3 points	3 points	4 points	4 points	3 points	3 points	1 point	3 points	5 points
BAKI	Fatiha	Belgium	http://graasp.eu/spaces/547316b74c09ae2e54918294	31	2	3	4	3	3	3	2	3	3			5
JOKIN	Ivo	Bulgaria	http://www.golabz.eu/lab/craters-earth-and-other-planets	23	2	2	3	2	2	3	2	2	2		3	
KUYUMDZHIEVA	Boryana	Bulgaria	http://www.golabz.eu/spaces/how-rainbow-can-be-arise	26	2	2	2	2	3	4	3	2	3		3	
BRAUCHLE	Maria	Bulgaria	http://goo.gl/KtB9gv	24	2	2	2	3	2	3	2	3	2		3	
KAPARTZIANIS	Achillefs	Cyprus	http://graasp.eu/ils/565b54580fffcc3250f80341/?lang=el	29	3	2	4	3	3	2	3	3	3		3	
KREOS	Ylle	Estonia	http://graasp.eu/ils/5704b96cc3ddb608c844ad19/?lang=et	27	3	3	3	3	3	2	2	3	2		3	
EHRPAIS	Kaie	Estonia	http://www.golabz.eu/spaces?f[0]=field_language%3A60	26	2	2	3	3	3	2	3	3	2		3	
WEISS	Ruediger	Germany	http://graasp.eu/ils/56de8a3b5829e7041c100bf1/?lang=en	30	2	3	4	3	3	2	4	3	3		3	
ARGYRI	Panagiota	Greece	http://graasp.eu/ils/565b54580fffcc3250f80341/?lang=el	35	3	3	4	3	3	4	4	3	3			5
SILIGARDOU	Fotini	Greece	http://graasp.eu/ils/56c9c02b5829e7041c0ffd5e/?lang=en	35	3	3	4	3	3	4	4	3	3			5

SURNAME	NAME	COUNTRY	ILS used	Total	Quality of the entry (10 points total)						Practical Implementation in class (10 points total)		Creativity and Originality (10 points total)		*Use of Go-Lab tools (5 points maximum) Please fill in ONLY ONE of the four boxes*	
					Implementation process and students' results	Overall assessment of students' performance	Successful use of the Go-Lab "Big Ideas of Science"	Encouraging students creativity	Use of inquiry approach	Degree of multidisciplinarity	Creative presentation	Originality of the work	Clarity of the overall entry	Use of an existing Go-Lab Inquiry Learning Space as is.	Use of an existing Go-Lab Inquiry Learning Space after being adapted by the contestant.	Use of a Go-Lab Inquiry Learning Space created from the contestant from scratch
					3 points max	3 points max	4 points max	3 points	3 points	4 points	4 points	3 points	3 points	1 point	3 points	5 points
LEONE	Daniela	Italy	http://www.golabz.eu/spaces/illinguaggiodellachimica	30	3	2	3	3	3	2	3	3	3			5
MOHAMMED	Oubella	Other Countries	http://www.golabz.eu/spaces/climate-change-natural-human-causes-and-consequences	34	3	1	3	2	3	4	2	3	3			5
YUZUGULER	Ayca	Other Countries	Big Ideas	31	3	1	4	3	3	4	3	3	2			5
STOJICEVIC	Nada	Other Countries/ Serbia	http://www.golabz.eu/spaces/3d-%D0%BC%D0%BE%D0%B4%D0%B5%D0%BB-%D0%BC%D0%BE%D0%BB%D0%B5%D0%BA%D1%83%D0%BB%D0%B0	31	3	2	4	3	3	4	2	3	2			5
DELIC	Suzana	Other Countries/ Croatia	http://www.golabz.eu/spaces/what-higgs-boson	30	3	1	4	3	3	2	1	3	2		3	
ROCHOWICZ	Krzysztof	Poland	http://graasp.eu/spaces/547316f34c09ae2e54918868	27	2	2	3	2	3	3	2	2	3			5
OPIDOWICZ	Magdalena	Poland	http://graasp.eu/ils/572319dec3ddb608c844b72e/?lang=pl	24	2	2	3	2	2	2	2	2	2			5
CORREIA GONSALVES	Luis Manuel	Portugal	ENTRY FORM MISSING	15	1	1	1	3	2	2	1	1	3	0	0	0
FREITAS	Fernanda	Portugal	Big Ideas	28	3	3	3	3	3	1	4	3	0	0	0	0
ORTIGAO	Manuela	Portugal	http://graasp.eu/ils/56cc7b245829e7041c100179/?lang=pt	30	3	3	3	3	3	2	4	3	3	0	3	0

SURNAME	NAME	COUNTRY	ILS used	Total	Quality of the entry (10 points total)						Practical Implementation in class (10 points total)		Creativity and Originality (10 points total)		*Use of Go-Lab tools (5 points maximum) Please fill in ONLY ONE of the four boxes*	
					Implementation process and students' results	Overall assessment of students' performance	Successful use of the Go-Lab "Big Ideas of Science"	Encouraging students creativity	Use of inquiry approach	Degree of multidisciplinarity	Creative presentation	Originality of the work	Clarity of the overall entry	Use of an existing Go-Lab Inquiry Learning Space as is.	Use of an existing Go-Lab Inquiry Learning Space after being adapted by the contestant.	Use of a Go-Lab Inquiry Learning Space created from the contestant from scratch
					3 points max	3 points max	4 points max	3 points	3 points	4 points	4 points	3 points	3 points	1 point	3 points	5 points
BALBINA	Marina	Portugal	http://graasp.eu/ils/57031c02c3ddb608c844abf6/?lang=pt	30	2	3	3	2	3	2	4	3	3			5
DELLIA-RAISSA	Fortu	Romania	Big Ideas	14	1	1	1	1	1	1	1	1	1			
RISTEA	Lidia	Romania	Big Ideas	21	2	2	2	2	2	2	2	2	2		3	
VLADESCU	Constantin Lucian	Romania	http://graasp.eu/ils/56d1a2c75829e7041c1006d6/?lang=en	30	3	3	3	3	3	3	3	3	3		3	
DIEZ	Carmen	Spain	http://www.golabz.eu/spaces/%EF%83%BC-colour-language-universe	30	3	2	2	3	3	4	2	3	3			5
GONZALEZ SANCHEZ	Maria Pilar	Spain	http://graasp.eu/ils/56be517a5829e7041c0ffa07/?lang=es	31	3	2	4	3	3	3	3	2	3			5
DE LA PENA VARONA	Almudena	Spain	http://graasp.eu/ils/571889ecc3ddb608c844b3c7/?lang=eu	31	3	3	1	3	3	4	4	2	3			5
KOBEL	Philippe	Switzerland	bit.ly/laborbite	33	3	3	4	3	3	3	3	3	3			5
DE CICCO	Susan	United Kingdom	http://graasp.eu/ils/56ab584495c4a25b80e1ec42/?lang=en	30	3	2	3	2	3	3	3	3	3			5

Annex V – Full report on the Go-Lab Summer School 2016

G O - L A B Event Code	[GR02-210716]
Title	International Science Teachers Training Course
Country City/Region	Marathon, Greece
Working language	English
Start/End Date	03/07/2015 – 08/07/2015
Organizing Institute	Ellinogermaniki Agogi
Coordinator name and email	Georgios Mavromanolakis *gmavroma@ea.gr* Tsourlidaki Eleftheria *eleftheria@ea.gr* Jens Koslowsky koslowsky@ea.gr Sofoklis Sotiriou *sotiriou@ea.gr*
Go-Lab Partners that were also Involved	Maria Jesus Rodriguez Triana (EPFL) Diana Dikke (IMC) Rosa Doran (NUCLIO) Jose Concalves (NUCLIO)
Activity Form	Summer School
Activity Type	International
Total number of teachers/schools	36/36
Implemented online labs	Phet labs, Geogebra, Craters, biology labs
Brief description	Summer School for working with teachers on: • the IBSE teaching approaches • the use of on-line labs • the Go-Lab authoring environment • the Go-Lab supportive application • creating activities through collaboration between teachers
Learning outcomes	Acquaintance with the IBSE approach. Training on the use of the Go-Lab Inquiry Learning Spaces Training on the use of the Go-Lab tools and services. Acquaintance with the “Big Ideas of Science”
Website	http://golab.ea.gr/
Photos or other relevant material	Included below.
Event agenda	Presented below.

Introduction

The “Go-Lab 2016 Summer School” that took place in Marathon, Greece from 3 to 8 of July 2016 was organized in the framework of the "Go-Lab: Global Online Science Labs for Inquiry Learning at School" project (http://www.go-lab-project.eu/).

Its main objective was to train teachers in using the Go-Lab tools and services while working collaboratively on creating ILSs. The course included lectures and workshops focusing on:

- Presentation and use of the Go-Lab inquiry learning scenarios.
- Hands-on sessions working with the Graasp authoring environment with Go-Lab on-line labs and other external resources.
- Presentation and use of the Go-Lab supportive applications.
- Presentation and use of the Big Ideas of Science.
- Preparing, uploading and sharing digital learning resources and scenarios using the Go-Lab tools.

One of the key aspects of the school is to encourage interdisciplinary teaching and collaborative work among teachers who teach different science subjects. In this scope and as preparation for the course participants were asked to develop a preliminary lesson plan or inquiry activity. Then share it with colleague participants during the summer school and develop it further collaboratively to a final version.

V.1 Contest for teachers

At the beginning of December 2015, the Go-Lab project launched the "Promoting Multidisciplinary Science Teaching" contest (http://golab.ea.gr/contest2016/) aiming to engage science teachers from Europe in the Go-Lab project. Teachers were asked to prepare an entry that would demonstrate how they used Go-Lab in their classroom. Participating teachers were asked to select, adapt or create their own ILS, implement it in class and prepare a presentation of the activity they did. All teachers' entries were evaluated by the national coordinators of the project and those who achieved the highest scores were announced winners in each country. The prize for the winning contestants was their participation in the Go-Lab 2016 Summer School with all their expenses covered.

Figure 6. The website of the contest for teachers.

By the end of the submission period (30 April 2016) 65 teachers registered, and 32 submitted winning entries to the contest. All participants created and implemented an ILS in their schools. A few weeks before the summer school 5 more teachers were added to the team of participants. These teachers had applied for and received a grant from the Erasmus+ programme.

V.2 Preparation

All information regarding the summer school was published to a website at http://golab.ea.gr/.

Figure 7. The website of the summer school.

In June, a month before the beginning of the summer school, all participants received an e-mail including all the necessary information about the summer school in general as well as instructions on what they were expected to do as a preparation for the course. This year the summer school focused mainly on promoting collaborative work as well as multidisciplinary activities. One of the key aspects of the school is to encourage interdisciplinary teaching and collaborative work among teachers who teach different science subjects. For this year the concept of work is **"systems and interactions"**. During preparation each participant developed a preliminary inquiry teaching activity of her/his field of expertise that is related to this concept. During the summer school participants form working groups to share, merge, fuse, combine ideas with colleagues in each group and develop it further collaboratively to a final version.

In order to facilitate the needs of the summer school and make the exchange of information easier, a Graasp space was created for the summer school. Participants also had a separate space were they uploaded and stored their work and materials. All the information relative to the summer school, (programme, questionnaires, tutors' presentations etc.) was also stored in the summer school Graasp space.

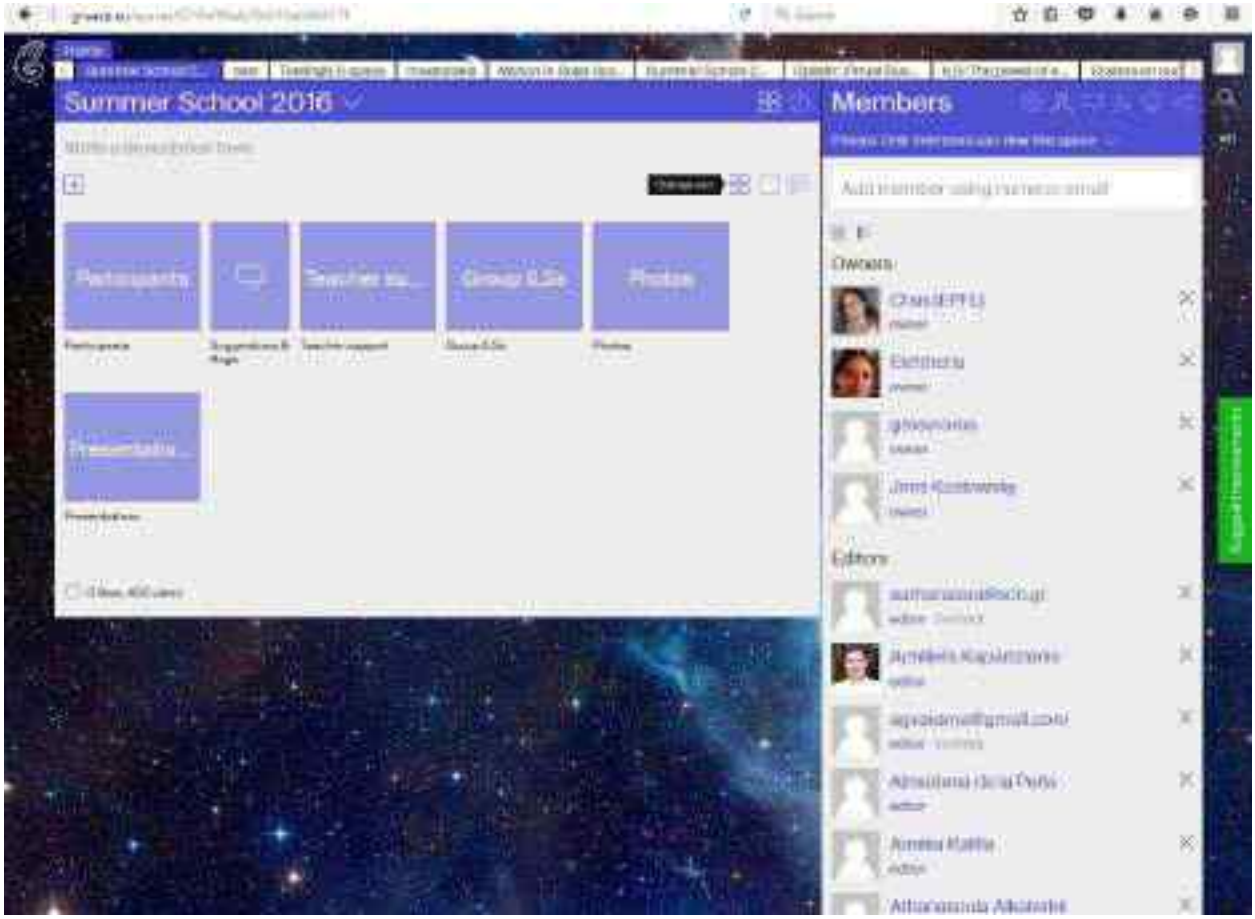


Figure 8. The Graasp space made for the summer school.

By the time the summer school began, all participants had prepared the materials requested. When arriving in Marathon, each participant received a summer school bag which included all the necessary materials:

- Training course program
- Go-Lab Teachers' Support Manual
- Go-Lab Classroom Scenarios Handbook

V.3 Workshops and activities

The program of the training course had 4 main branches:

- Lectures/presentations
- Workshops
- Social/cultural activities
- Final presentations of the work of participants

Day 1:

The summer school started with a welcome session which included an introduction to the structure of the summer school, its main concept and objectives.

Figure 4. Opening session.

Day 2:

The first session of the day started with organizing the participants in groups. Based on the materials the participants had sent before the summer school, 8 teams were created each of which had 4 to 5 members. Each team chose a representative name related to the main concept idea of the ILS they were planning to develop. The names of the teams were:

- Climate Change
- Transition of Mercury
- Floating Quartet
- Diffusion across membranes
- Photosynthesis
- Roller-coasters
- Go Satellite!
- Earth smashers

Each team has its own tutor throughout the course. During the summer school, each group would have to make use of the materials the team members had prepared and create one ILS per group. They enhanced it throughout the summer school based on the input received during the lecture and workshop sessions of the course.

On the first session of the day, participants were challenged on defining what is inquiry, shared their experiences and discussed on the overall approach of inquiry-based science teaching and learning, in what circumstances they found it more suitable for use, what barriers they usually experience, etc.

After discussing the tutors presented an example inquiry activity entitled “Is it really inquiry? An example inquiry: astronomy and astrology”. The purpose of this presentation was to demonstrate how a subject can intrigue the curiosity of students, what are the main phases of inquiry are, what are the objectives in each phase, what is the role of teacher in each phase.

The evening session of the day, was a hands-on workshop where participants were working with Graasp authoring environment and the Go-Lab repository of resources at golabz.eu. During the session, participants had time to go through the materials of their team in detail, discuss and decide about the initial structure of their ILS. Then the teams tarted building their ILSs in Graasp.

Figure 5. Team “Photosynthesis” working during the session.

Day 3:

The morning session of the third day was divided in two parts. During the first part participants were introduced to the concept of “Big Ideas of Science”. After a general introduction on the subject, participants were asked to come up with their own ‘Big Ideas of Science’ and write them down in post-it notes. After completing this task they were asked to put the post-it notes on a wall and group them into subjects. After the grouping of the ideas, participants selected which group of ideas they preferred to work on. Each group was asked to revise all the post-it notes of the group and come up with one “Big Idea of Science” based on them. By the end of this part of the session each group, presented the “Big Idea” they had concluded to. The participants came up with the following big ideas: Systems are made of parts which interact with each other; all matter in the universe is made of particles; all living organisms are made of cells; energy is conserved and transformed; there are four fundamental forces and they are responsible for all interactions; the evolution of living organisms is an ongoing process.

In the second part of the morning session there was also a presentation on “Inquiry in 45 minutes”

The afternoon session of the third day was devoted to a hands-on workshop on the Go-Lab supportive applications. The workshop, entitled “Enhancing inquiry using supportive applications”, had three main sections: review of various available apps, collection of users’ feedback and requests for improvement and finally demonstration of new apps. The tutors used demo ILSs which included the apps. Participants were given ample time to play with each app. During this practice session, the tutors facilitated the participants by answering questions and explaining how each app works and how it can be configured.

Figure 6. Feedback collection and suggestions for improvement on various supportive apps.

Day 4:

The morning session of the fourth day was devoted to hands-on workshop during which teams worked along their tutors to develop further their ILSs, to enhance them with supportive apps and online resources.

Figure 7. Team "Climate change" working during the session.

Day 5:

The morning session of the fifth day was devoted to hands-on workshop during which teams had to finalize their ILSs that will finally present. Tutors or members of other teams were acting as critical reviewers or school students. They practiced the ILSs, spotted errors, suggested final improvements to enrich the teaching and learning potential.

Figure 8. Team "Go Satellite!" working during the session.

The afternoon session of the fifth day was devoted to a presentation on funding opportunities for schools and teachers from the Erasmus+ programme. During the session entitled "Exploring EU funding opportunities: guidelines for submitting an Erasmus+ KA1 and KA2 proposal" participants were given practical guidelines about Erasmus+ proposals, which are the opportunities and benefits, how to write and submit a proposal for school projects or teacher professional development, which are the requirements and deadlines, where to find further information and guidance etc.

Day 6:

During the last day of the summer school participants presented the inquiry learning activities and spaces, ILSs, which they have created. Each team had about 15-20 minutes to present and discuss their work. In total the eight teams presented the following ILSs:

Team “Climate Change”
ILS title: Climate Change: Natural, Human Causes
ILS link: http://graasp.eu/ils/577f476ac3ddb608c844d8d1/?lang=en

Team “Transit of Mercury”
ILS title: Transit of Mercury
ILS link: http://graasp.eu/ils/577e2a0cc3ddb608c844d889/?lang=en

Team “Floating Quartet”
ILS title: Density
ILS link: http://graasp.eu/ils/577e2b37c3ddb608c844d88b/?lang=en

Team “Diffusion across membranes”
ILS title: Diffusion Across a Semipermeable Membrane
ILS link: http://graasp.eu/ils/577f4534c3ddb608c844d8cf/?lang=en

Team “Photosynthesis”
ILS title: Plant growth
ILS link: http://graasp.eu/ils/577f4829c3ddb608c844d8d2/?lang=en

Team “Roller-coasters”
ILS title: Crazy race - studying energy
ILS link: http://graasp.eu/ils/577e59dac3ddb608c844d898/?lang=en

Team “Go Satellite!”
ILS title: Go Satellite!
ILS link: http://graasp.eu/ils/577e164ec3ddb608c844d882/?lang=en

Team “Earth smashers”
ILS title: Craters in the Solar System
ILS link: http://graasp.eu/ils/577cb9a0c3ddb608c844d84a/?lang=en

Figure 9. Group photo at the final day of the summer school.

Other Educational/Cultural Events:

Field trips and extra educational/cultural activities were also carried out during the summer school. These included a visit at Cape Sounio and the Temple of Poseidon, a visit to the Museum of Acropolis and the Acropolis.

Figure 10. Group photos at visits at the archaeological sites of Sounio and Acropollis.

V.4 Programme

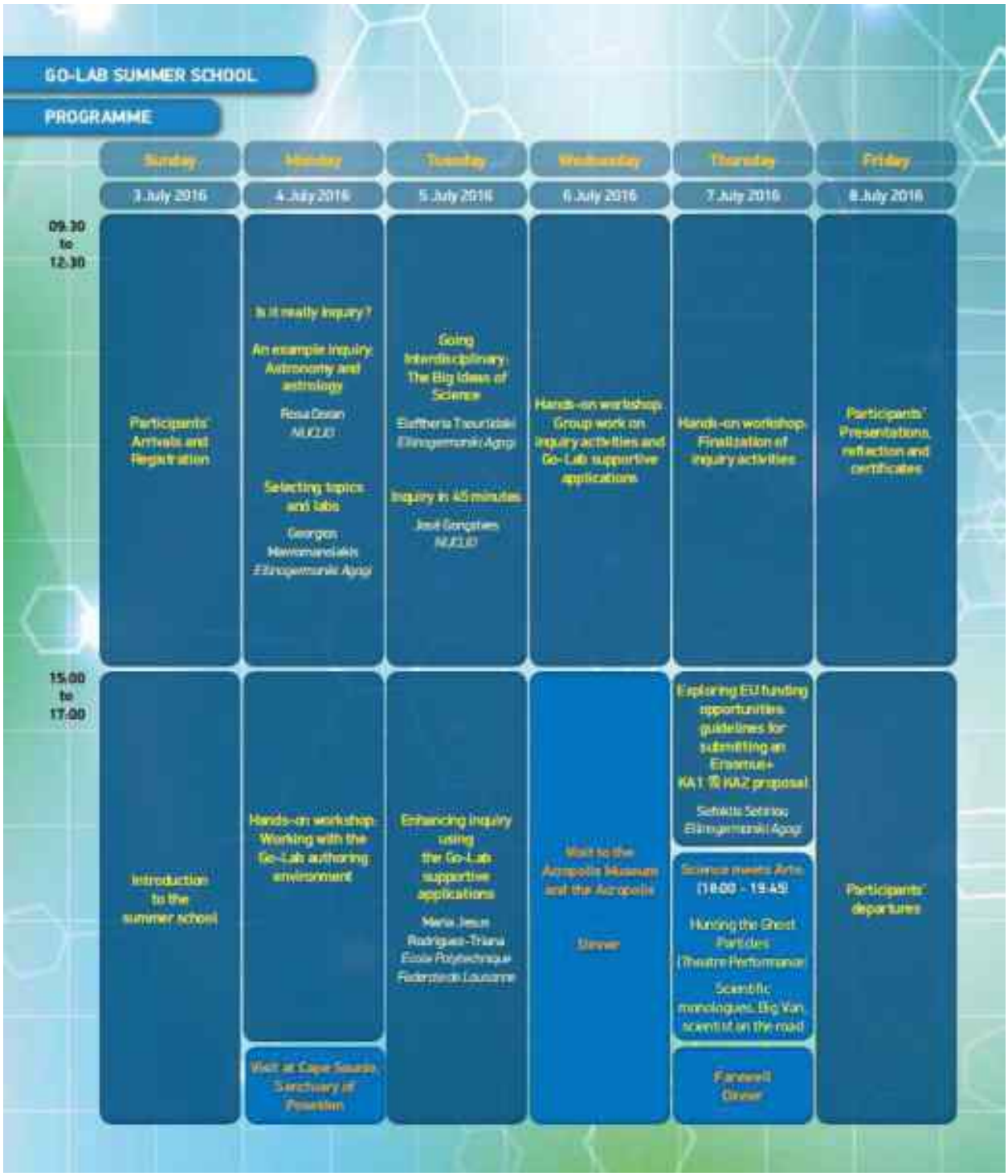


Figure 91. The programme of the Summer School.

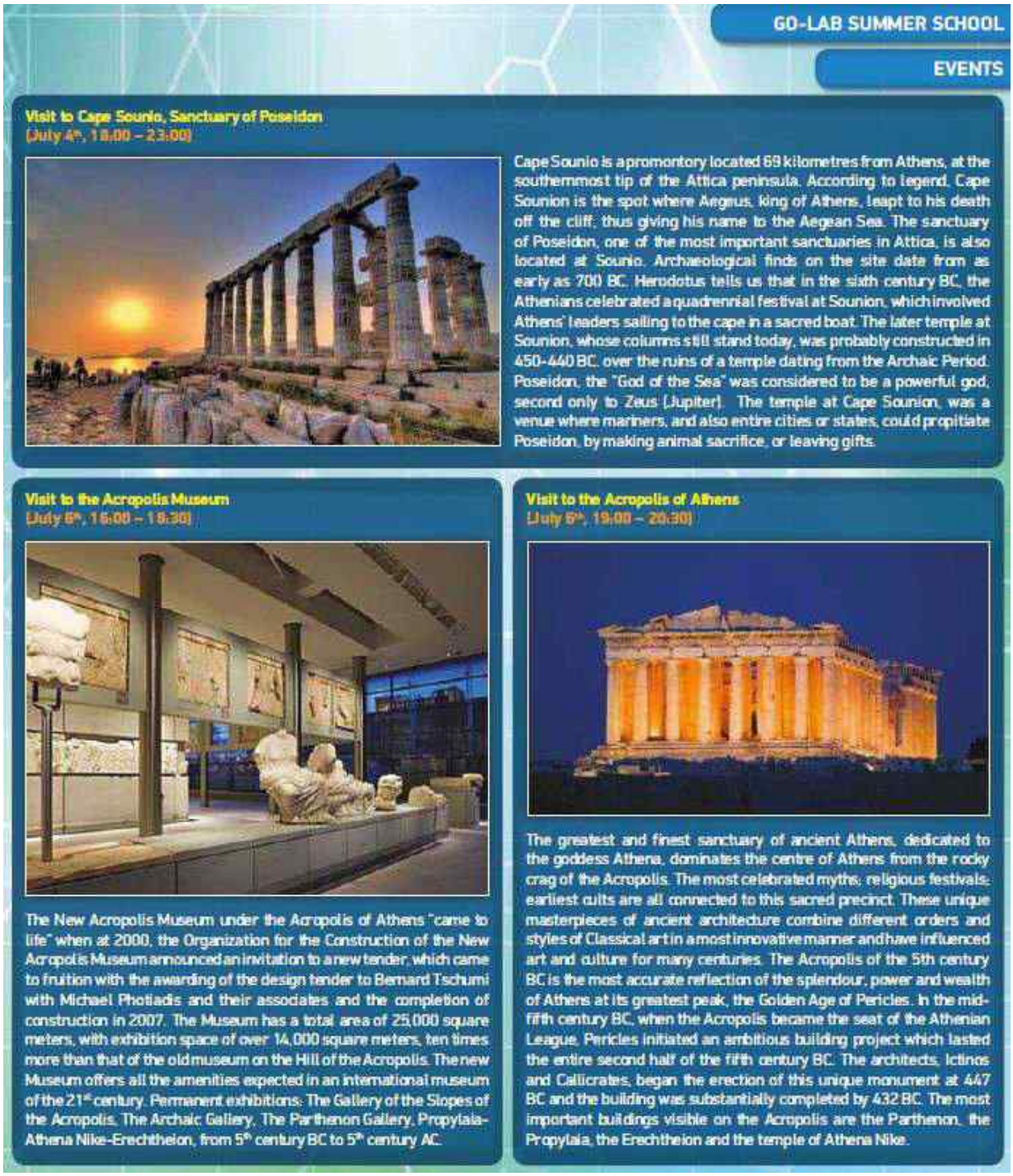


Figure 102. Description of visits to archaeological sites and museums.

V.5 Participants

The 2016 summer school was attended in total by 37 teachers from around Europe (5 of whom were funded through Erasmus+ grants).

Table 3. Participants per country.

Country	Participants	Erasmus+
Belgium	1	
Bulgaria	3	
Croatia	2	1
Cyprus	1	
Estonia	1	
Finland	1	
France	1	
Germany	1	
Greece	2	
Hungary	3	
Italy	1	
Latvia	1	1
Poland	4	
Portugal	3	
Romania	3	
Serbia	1	
Spain	5	3
Switzerland	1	
Turkey	1	
UK	1	
Total	**37**	

V.6 Inquiry Learning Spaces

Team “Climate Change”
ILS title: Climate Change: Natural, Human Causes
ILS link: http://graasp.eu/ils/577f476ac3ddb608c844d8d1/?lang=en

Team “Transit of Mercury”
ILS title: Transit of Mercury
ILS link: http://graasp.eu/ils/577e2a0cc3ddb608c844d889/?lang=en

Team “Floating Quartet”
ILS title: Density
ILS link: http://graasp.eu/ils/577e2b37c3ddb608c844d88b/?lang=en

Team “Diffusion across membranes”
ILS title: Diffusion Across a Semipermeable Membrane
ILS link: http://graasp.eu/ils/577f4534c3ddb608c844d8cf/?lang=en

Team “Photosynthesis”
ILS title: Plant growth
ILS link: http://graasp.eu/ils/577f4829c3ddb608c844d8d2/?lang=en

Team “Roller-coasters”
ILS title: Crazy race - studying energy
ILS link: http://graasp.eu/ils/577e59dac3ddb608c844d898/?lang=en

Team “Go Satellite!”
ILS title: Go Satellite!
ILS link: http://graasp.eu/ils/577e164ec3ddb608c844d882/?lang=en

Team “Earth smashers”
ILS title: Craters in the Solar System
ILS link: http://graasp.eu/ils/577cb9a0c3ddb608c844d84a/?lang=en

Annex VI – Full report on the Go-Lab Summer School 2016

The full summary can be found attached to this document.

Annex VII – Full report on the Go-Lab Summer School 2016

The full summary can be found attached to this document. The analysis of the responses was done a few days before the summary was retrieved to be attached to this document. Therefore, the numbers presented in D6.7 are slightly different than what can be seen in the summary. We have studied the replies from 66 responders and the attached summary have 70.

rosa.doran@gmail.com

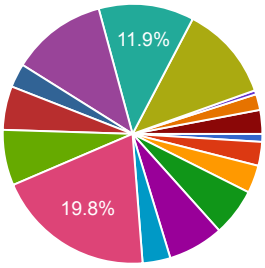
Edit this form

206 responses

View all responses Publish analytics

Summary

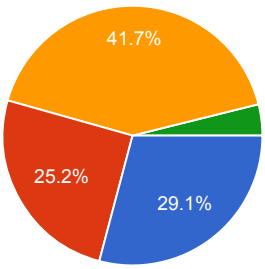
Your Country



Austria	**2**	1%
Belgium	**6**	2.9%
Bulgaria	**7**	3.4%
Cyprus	**12**	5.8%
Estonia	**14**	6.8%
Germany	**7**	3.4%
Greece	**40**	19.4%
Italy	**14**	6.8%
Netherlands	**11**	5.3%
Poland	**6**	2.9%
Portugal	**24**	11.7%
Romania	**24**	11.7%
Spain	**24**	11.7%
Switzerland	**1**	0.5%
United Kingdom	**4**	1.9%
Other (International Group)	**6**	2.9%

Modes of use of the Go-lab Platform

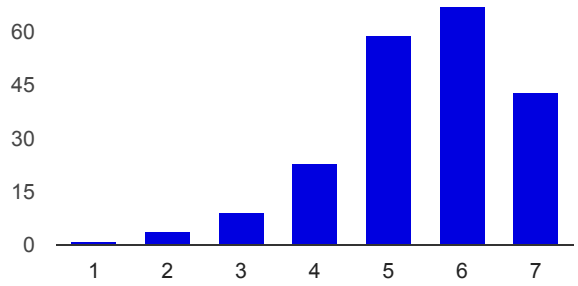
With which of the following options would you identify the most regarding the use of Go-Lab :



A. I am only searching for online labs on the Lab Repository to use them in my lesson	**60**	29.1%
B. I am using existing Inquiry Learning Spaces (ILS) provided by the Go-Lab team or other teachers	**52**	25.2%
C. I am an experienced Go-Lab user. I am creating new Inquiry Learning Spaces (ILS) for my lessons	**86**	41.7%
Other	**8**	3.9%

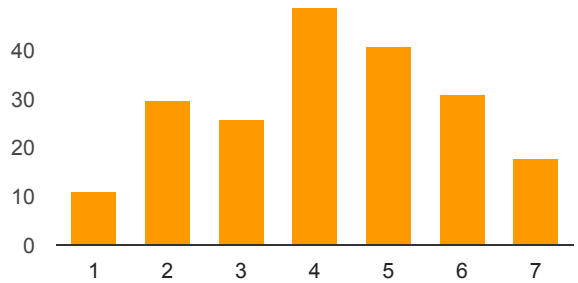
Questions

1. To what extent do you think that the Go-Lab tools have supported your teaching practice?



Not at all: 1	**1**	0.5%
2	**4**	1.9%
3	**9**	4.4%
4	**23**	11.2%
5	**59**	28.6%
6	**67**	32.5%
A lot: 7	**43**	20.9%

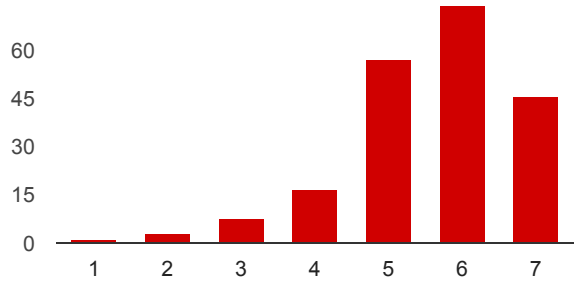
2. With Go-Lab I have had the opportunity to introduce labs work in almost every lesson



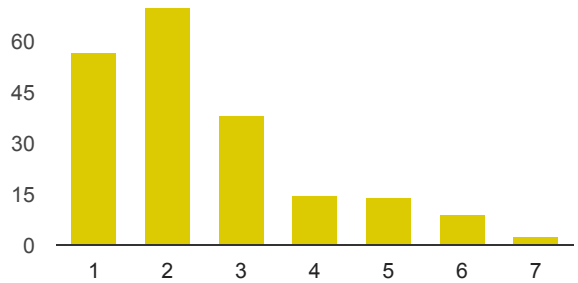
Strongly Disagree: 1	**11**	5.3%
2	**30**	14.6%
3	**26**	12.6%
4	**49**	23.8%

5	**41**	19.9%
6	**31**	15%
Strongly agree: 7	**18**	8.7%

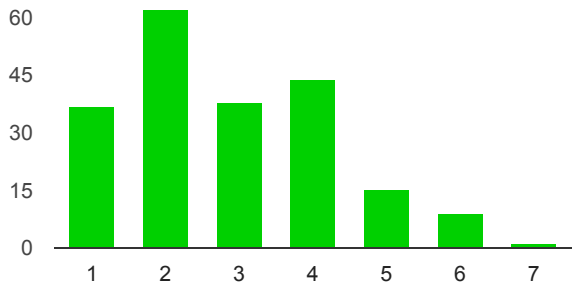
3. In the table below you will find 10 pairs of contrasting attributes. Where you place your choice between two attributes indicates your view about the quality of [the Go-Lab Portal]. (Note: There is no right or wrong answer. Your personal opinion is what counts.)



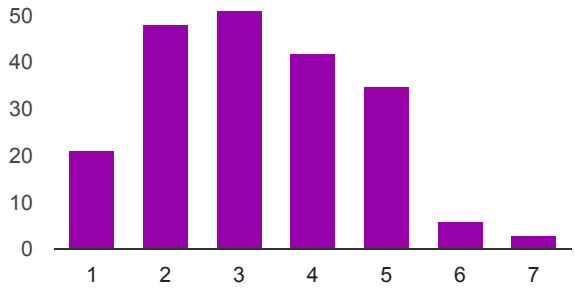
Confusing: 1	**1**	0.5%
2	**3**	1.5%
3	**8**	3.9%
4	**17**	8.3%
5	**57**	27.7%
6	**74**	35.9%
Structured: 7	**46**	22.3%



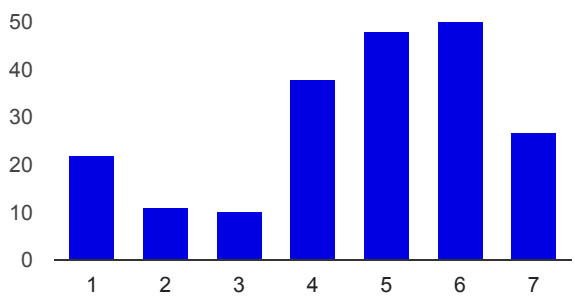
Practical: 1	**57**	27.7%
2	**70**	34%
3	**38**	18.4%
4	**15**	7.3%
5	**14**	6.8%
6	**9**	4.4%
Impractical: 7	**3**	1.5%



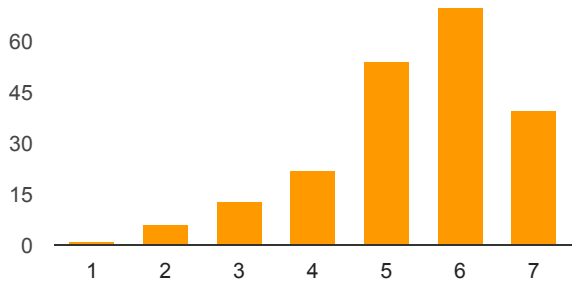
Predictable: 1	**37**	18%
	2	**62**	30.1%
	3	**38**	18.4%
	4	**44**	21.4%
	5	**15**	7.3%
	6	**9**	4.4%
Unpredictable: 7	**1**	0.5%



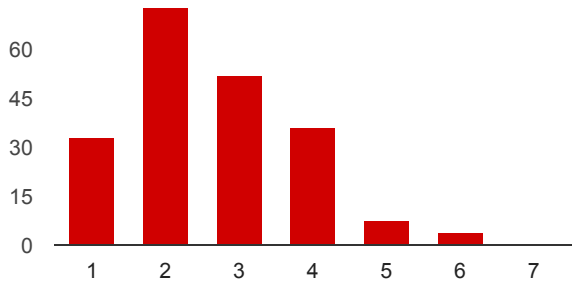
Simple: 1	**21**	10.2%
	2	**48**	23.3%
	3	**51**	24.8%
	4	**42**	20.4%
	5	**35**	17%
	6	**6**	2.9%
Complicated: 7	**3**	1.5%



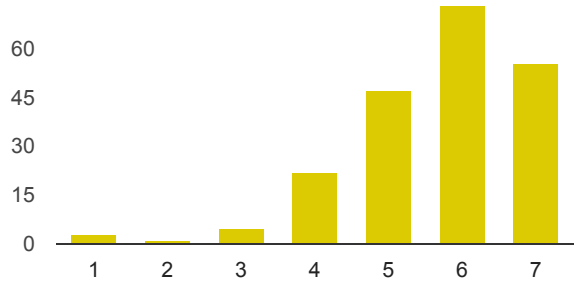
Cheap:	1	**22**	10.7%
	2	**11**	5.3%
	3	**10**	4.9%
	4	**38**	18.4%
	5	**48**	23.3%
	6	**50**	24.3%
Premium:	7	**27**	13.1%



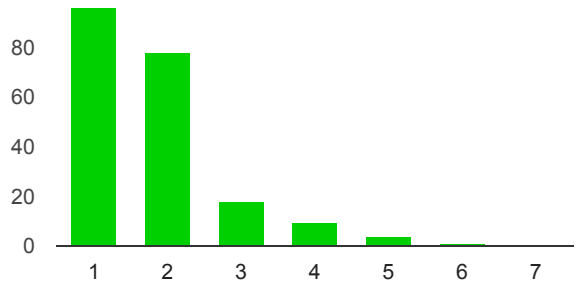
Dull:	1	**1**	0.5%
	2	**6**	2.9%
	3	**13**	6.3%
	4	**22**	10.7%
	5	**54**	26.2%
	6	**70**	34%
Captivating:	7	**40**	19.4%



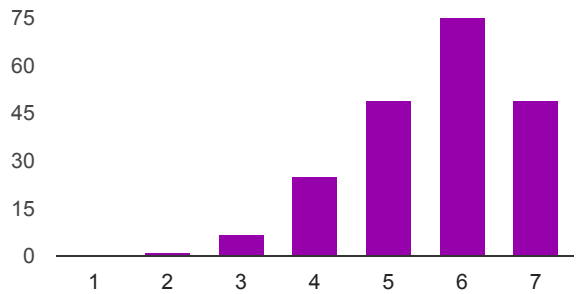
Stylish:	1	**33**	16%
	2	**73**	35.4%
	3	**52**	25.2%
	4	**36**	17.5%
	5	**8**	3.9%
	6	**4**	1.9%
Tacky:	7	**0**	0%



Unimaginative: 1	**3**	1.5%
2	**1**	0.5%
3	**5**	2.4%
4	**22**	10.7%
5	**47**	22.8%
6	**73**	35.4%
Creative: 7	**55**	26.7%



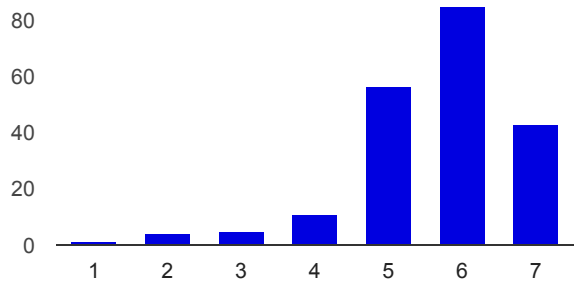
Good: 1	**96**	46.6%
2	**78**	37.9%
3	**18**	8.7%
4	**9**	4.4%
5	**4**	1.9%
6	**1**	0.5%
Bad: 7	**0**	0%



Ugly: 1	**0**	0%
2	**1**	0.5%
3	**7**	3.4%
4	**25**	12.1%
5	**49**	23.8%
6	**75**	36.4%
Beautiful: 7	**49**	23.8%

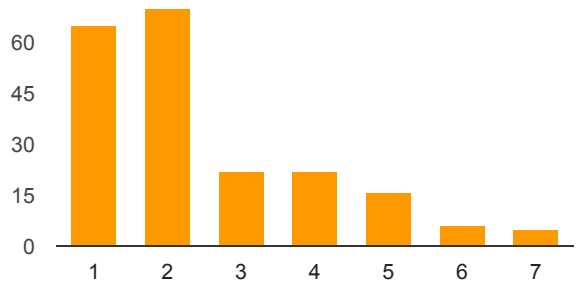
4. For each of the following statements, please indicate your extent of agreement by circling the number of choice

[The Go-Lab Portal's] capabilities have met my requirements.



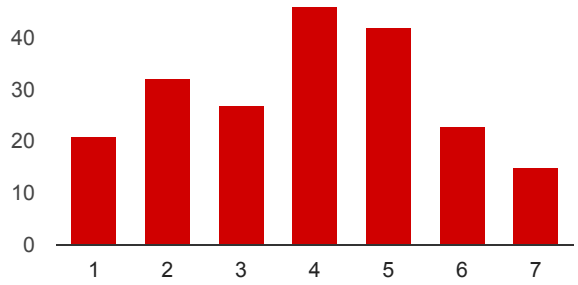
Strongly Disagree:	1	**1**	0.5%
	2	**4**	1.9%
	3	**5**	2.4%
	4	**11**	5.3%
	5	**57**	27.7%
	6	**85**	41.3%
Strongly Agree:	7	**43**	20.9%

Using [the Go-Lab Portal] has been a frustrating experience.



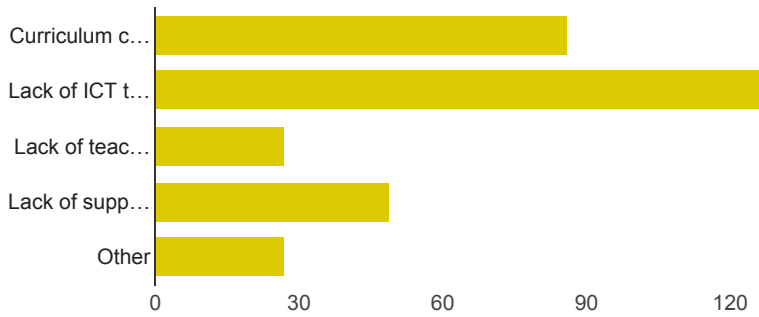
Strongly Disagree:	1	**65**	31.6%
	2	**70**	34%
	3	**22**	10.7%
	4	**22**	10.7%
	5	**16**	7.8%
	6	**6**	2.9%
Strongly Agree:	7	**5**	2.4%

I have spent too much time working with [the Go-Lab Portal].



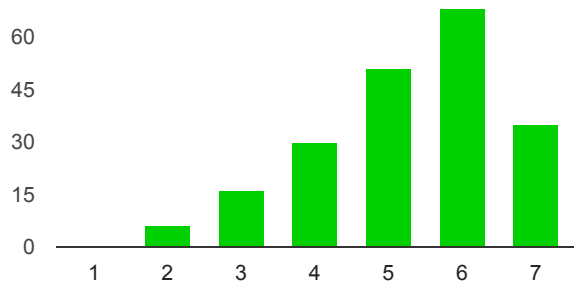
Strongly Disagree: 1	**21**	10.2%
2	**32**	15.5%
3	**27**	13.1%
4	**46**	22.3%
5	**42**	20.4%
6	**23**	11.2%
Strongly Agree: 7	**15**	7.3%

5. What barriers have you identified when introducing Go-Lab in your classroom activities? (choose one or more options)



Curriculum compatibility – The proposed activities are not part of the curriculum	**86**	41.7%
Lack of ICT tools in classroom – There are no computers for every student	**129**	62.6%
Lack of teachers' ICT literacy – Too demanding for me	**27**	13.1%
Lack of support from school	**49**	23.8%
Other	**27**	13.1%

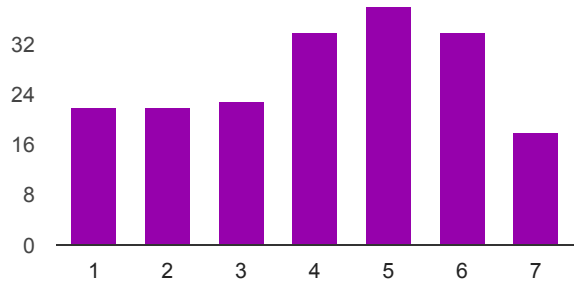
[The Go-Lab Portal] is easy to use.



Strongly Disagree: 1	**0**	0%
2	**6**	2.9%
3	**16**	7.8%
4	**30**	14.6%
5	**51**	24.8%
6	**68**	33%
Strongly Agree: 7	**35**	17%

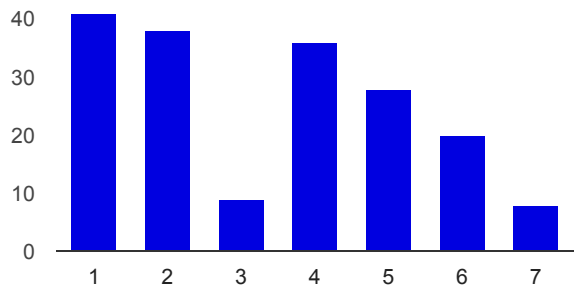
6. How would you rate the support in the use of online laboratories via related trainings or other projects from...

your school community?



Not at all: 1	**22**	11.5%
2	**22**	11.5%
3	**23**	12%
4	**34**	17.8%
5	**38**	19.9%
6	**34**	17.8%
A lot: 7	**18**	9.4%

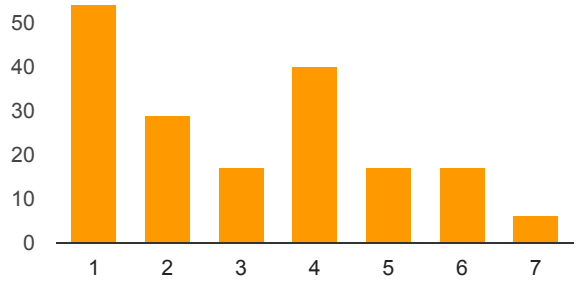
your local community?



Not at all: 1	**41**	22.8%
2	**38**	21.1%

3	**9**	5%
4	**36**	20%
5	**28**	15.6%
6	**20**	11.1%
A lot: 7	**8**	4.4%

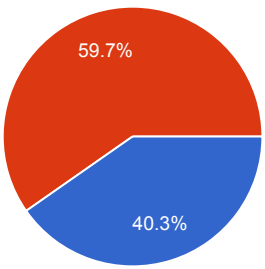
the Ministry of Education?



Not at all: 1	**54**	30%
2	**29**	16.1%
3	**17**	9.4%
4	**40**	22.2%
5	**17**	9.4%
6	**17**	9.4%
A lot: 7	**6**	3.3%

Types of use of Go - lab

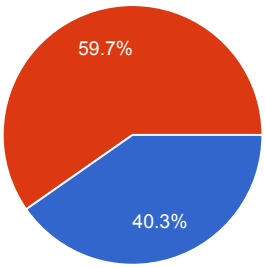
7. The Go-Lab tutoring platform provides the opportunity to share your experiences with peers and get support while are you using Go-Lab. Have you used this service? – Yes -- No



yes	**83**	40.3%
no	**123**	59.7%

If yes: Have you published your own ILSs?

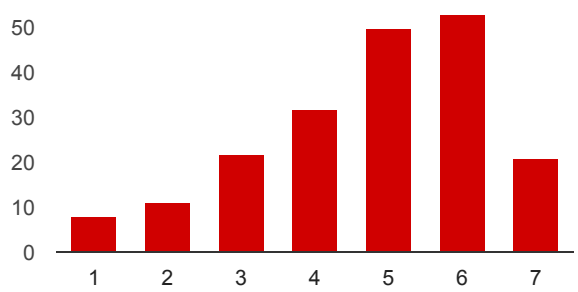
yes	**83**	40.3%
no	**123**	59.7%



n/a
Lack of time
I did not make one
yes, The students like it. They can do it on their speed
Yes. I'd like to increase the use of Go lab.
Yes, with use of ILSs and labs
yes, by creating my own ILS for every theme
Yes, practical to use.
Yes. But i have to make ILS for computer science
yes, because students aprreciated it very much and many activities are still to be explored
I will use Golab, when it fits with the curricilum
To support my lessons.
I like to keep them to myself.
I have not tried it yet
lack of time
I am a learner
I have not so much knowledge about GoLab
I am starting
I will publish it next year. Lack of time
still learning. Need more time to try it
I have not tried yet
not yet
A formação que houve chegou para explorar o restante.
umfangreichere Gestaltung erforder viel Zeit (z.B. Erstellung von Bildmaterial); ein eigenes ILS wurde jedoch nur für Schüler erstellt
I found an ILS for my classroom
I have just used already existing ones
I am a beginer.
I have not time.
Other duties for my school and/or personal reasons.
I don't know
I didn`t know about this possibility
N/A
I think it should be more advanced before I publish
I have not made one
Only just starting with Go Lab but would like to in the future
I mAde iT for myself

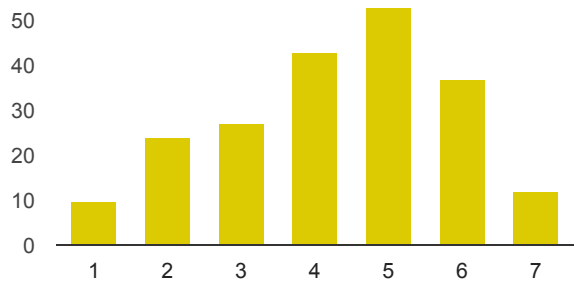
Working on it
it was primitive
because I'm work a lot with University and school
Time.
I am too new in Go-Lab
I'm not so good in creating ILSs.
there was no need
Not good enough at writing ILSs yet
I haven't had chance to look at this but would like to.
I have been involved in other school projects
I DID NOT KNOW IT
Falta de tiempo
Too much time consuming
As CS teacher not use lessons in STEM
not enough use
The main reason was lack of free time, but I am planning to do this in the Future.
BECAUSE I DON'T SECURE IF IT IS GOOD WORK
the lake of time
Because I used very little.
NU vorbesc curent engleza
I did not complete making an ILS
I don't know... sorry
I do not know the platform in detail
I don't have enough time for this. I will try in the future.
I had no time.
i don't know...
stuffed curriculum
I do not want.
Takes too much time.
time
nvt

8. Do you think that the ILSs that have been developed by the GoLab team have supported your practice and covered your teaching needs?



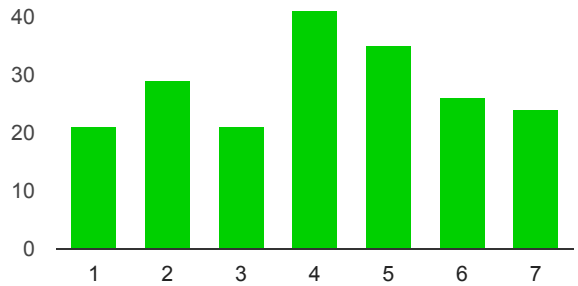
Not at all: 1	**8**	4.1%
2	**11**	5.6%
3	**22**	11.2%
4	**32**	16.2%
5	**50**	25.4%
6	**53**	26.9%
A lot: 7	**21**	10.7%

9. Would you describe the use of Graasp as easy?



Not at all: 1	**10**	4.9%
2	**24**	11.7%
3	**27**	13.1%
4	**43**	20.9%
5	**53**	25.7%
6	**37**	18%
A lot: 7	**12**	5.8%

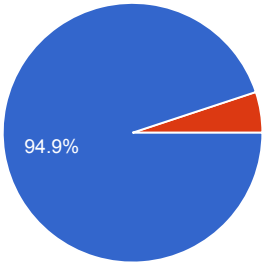
10. How useful have the "Big Ideas of Science" been for your lessons?



Not at all: 1	**21**	10.7%
2	**29**	14.7%
3	**21**	10.7%
4	**41**	20.8%
5	**35**	17.8%
6	**26**	13.2%
A lot: 7	**24**	12.2%

Open Questions

11. Will you continue using Go-Lab in your class?



yes	**187**	94.9%
no	**10**	5.1%

If yes, how? If no, why?

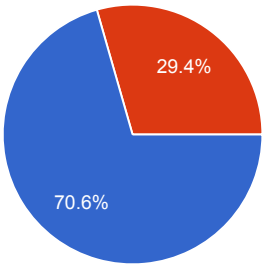
in the classroom
As an addition to my lessons.
As a support for my teaching
yes, improving
encouraging future teachers to use it and create ILS
it is very useful
in science projects
to engage students
changing style of class in helpful to teach
I think that it is a motivative tool
small reseearch projects
because it is a very useful tool to motivate students
maybe to find reccommend online labs
Easy way to include labs at a lesson with low amount of resources. Allows autonoumus work by the students
Like this year and the last, with remote, virtual and real labs.
Using the virtual Labs
Beside the complexity of the portal, maybe continued using ILS lessons side by side with another platform based on internet.
Lack of computers in the school
Erstellung von ILS für passende Unterrichtseinheiten
use my ils
Using it with students
to let the students experiment on their own
Use labs
because it offers research training approach
Create more ILSs, engage more students,
Apllying everything I learn
Interesting, creative.

I will continue using in my lessons
Make another own ILS and to assessment of the class lesson
As a useful, accesible and permanent tool for our teaching sessions.
The lessons are useful and necessary
I will use the existing ILS and create my own ILSs.
The resources- apps and tools
In some cases and if there is an appropriate unit I will use it.
As a complementary tool for the experimentation with real materials, so that to promote the development of inquiry skills and for the subjects which can only be introduced with the use of computers.
I will continue to use Go-lab especially when the teaching of a concept can be enhanced through the apps and tools of Go-lab.
Yes I will search for online labs to use them in my lesson.
yes, by using tools for inquiry skills
I have already skills for this part
During the current school year I am planning to use the ILSs i have already created and, in addition, I will create new.
Yes, by using new learning spaces and labs.
I maybe implement something related.
I would like to use it because there are many laps for my class and there is a possibility to create ILS to serve as assignments for students. This of course depends on the available equipment.
Yes, by using online labs.
Yes, as part of my teaching practice it can offer to students additional experiences, regarding lab work. It is easy to use and I could use it at the end of a unit as a helpful mean for clarifying any misconceptions.
I will use this ILS or one based on this
I will searching for online labs on the Lab Repository to use them in my lesson, I will using existing Inquiry Learning Spaces (ILS) provided by the Go-Lab team or other teachers and I will creating new Inquiry Learning Spaces (ILS) for my lessons.
I Will use the labs
Developing their use across the whole school. Would like to embed in all science teaching
My ILS
motivation, unusual lesson, students learning at their own pace and independently.
on line lab
In my classes in Chemistry, Biology, Astronomy with PBL and cooperative learning
Use the same ILS
Currently, i start to use again golab in my science lesson's (Ohm' law) and I will select others labs in the next lessons.
I like to change support
Creating new ILS and inprouving other ILS.
I think I'll use labs and ILS or in classroom or as student activity.
students reactions were very positive and I found it very useful for my teaching: my school has also the suitable equipment.
I would learn to create ILSs

using the ils
I want to continue to create and publish new ILSs
practical use of ILSs
the childrens like the portal, it is motivating for them
I hope to
We require an increased amount of online learning now and the labs help make it more interesting and show learning as well as being able to tailor them around the subject.
Labs
As a part of lesson plans
I'll continue creating different ILSs
using the inquiry learning in my lessons and the tools and resources provided by Go Lab portal
I will make my students working with ILS as much as I can
In my science lessons
Use online labs as addition to practics
During my lessons, today I used PHET simulator (atoms) inside GO Lab
Doing my own ILSs
Como hasta ahora ya que es un recurso muy motivador.
useful
Anyway there are many different resources
i value its systematic approach
We have new science curricula, so almost all new activites are very relatd with Go lab contents
I will some inquiry activities already created to Go-Lab platform.
more use, when I'm available
This is a great platform, which help to bring a different approach to science in a classroom.
Good ideas for lesson
Creating & Sharing new ILSs
Try that students can use it at home.
BECAUSE IT IS CREATIVE FOR STUDENTES
Doing more ILS
Makes lessons more interesting and involving for the students.
to create scenarios; to use scenarious from Go-Lab which were created by other teachers; to use some virtual labs;
I I like to do experiments wiht my students
I'm tetired
designing projects from an ILS facilitates inquiry and conceptualize and experience
I'll create new ILS for my lessons, because my students enjoy working with GoLab platform..
I'll create new ILS for my Science lessons.
As homework for sttudents
using tools, online laboratories and ILS always provided that it fits the content I have to teach
I Will use Some of the labs/simulations
It is useful, interesting and offers great possibilities
Students are interested and open-minded, so they like to work with ILSs.
-

Demonstration and experiment
I will try to use as many Inquiry Leanning Spaces in my lessons and to create ILSs of my own.
Only when necessary.
I will use the online experiments in my Physics lessons
too complicated to do and too easy for the students
I´m using on projects and I´ll continue using on next year.
if needed as backup for conventional approach
I like using online labs, these support my lessons the most.
I would like to create more ILSes
I will try to make ILS.
make assignments using Go-Lab
Continue creating ILSes
using virtual lab and trying again to use Graasp
ontwikkeling nieuwe opdrachten passend bij boek en bij scrum

12. Has Go-Lab improved your knowledge of IBSE?



yes	**139**	70.6%
no	**58**	29.4%

If yes, how?

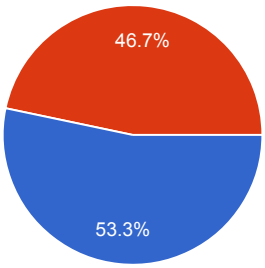
yes, I learned new things and the way how to teach it.
Yes, by using apps and virtual and remote labs
Yes, it made it easier
yes, offer the posibility to go step by step and discover the "science".
yes
I use some labs
I started using IBSE in more activities and lessons with GO-LAB facilities
yes it did, I love how IBSE is implemented in the ILS. It's a constant reminder.
In terms of the pre-structured ILSes.
yes, the five steps are very clear
the procedure
I already know about IBSE, but I have read more about it participating in GoLab
different approach to this kind of teaching
I used this approach
able to develop small research projects
showing an structured approach to it
The metodology was improved and well reinforced with the activities
I start to use IBSE in all my classes.

New techniques
ibse model of 5 steps
Using it
By offering ready-made lessons with mobile and virtual laboratories and training courses and summer schools - very useful and interesting!
I'm more aware of the students' needs, I know how to adjust my lesson to their possibilities, interests and needs.
By providing practical examples
By good pracices
I find and use many links
As usefull models, especially thanks to all material proposed by coordinators and partners of this project.
There are many new activities
No, I was already very familiar with ICT.
The inquiry cycle was unknown to me before the use of Go-Lab.
Yes because it provides a structured and a clear way for developing inquiry - based lessons
The Go Lab helped me gain understanding of different concepts and topics of Science Education.
by using tools
Go-labs has helped me understand the different stages of inquiry and how I should apply them to the classroom.
The way that instructional proposals are structured and their implementation in my daily teaching practice, have improved my knowledge about inquiry learning in science largely.
Yes, because you can find in the Go lab platform, many learning spaces which are based on this approach.
Little
I was already very familiar with inquiry learning.
Yes, I learned how to apply inquiry in my teaching.
But through the implementation of inquiry with Go-Lab you can become familiar so that to help your students learn with it.
Giving pupils more independence
It's easy for reserch and experiences
Helped me to inspire students to study STEM.
Has deepened my knowledge about IBSE. It's easier to apply than I thought.
what is IBCE?
the Inquiry Learning implementation is facilitated by the structure of the ILS frame
with virtual laboratory
I changed the way my pupils learn
ILS is organized according to five distinct general inquiry phases: Orientation, Conceptualization, Investigation, Conclusion and Discussion.
I have paid more attention to use IBSE during my lessons
I realised again that IBSE represents an appropriate motivational method for science education
We don't use IBSE
Having the opportunity to develop content for elearning and being able to guide other staff to use it.

I learned how I can project my lessons to increase the creativity and the interest for science to my students
It helped me explaining my students how to analyse each step
I was not used to inquiry learning
Each lesson is organized with the scientific method and leaves open questions for students
before I didn't even knew about IBSE
Trough useful examples about IBSE
By systematic support
To increase crtical thinking among students and my IT skills
I already new what IBSE was before starting work in Go-LAB But I had to do more structured work in order to define clearly what were the goals I want my students to achieve.
with tools
In the class with my students
By creating ILSs for several didactical/students' needs
Planning the ILS allows that.
IT IS EASY FOR CRITICASL THINKING
I'm more aware of the steps in IBSE, the platform guides us into all steps.
I'm more aware of the fact that the teachers not only give knowledge to students but ask them too find the answers themselves.
to improve my skills how to use Go-Lab posibillity
By encourageing the interest in science and technology
Beacuse involorganizes the progressive development of scientific ideas through conducting own investigation
because of the blue-print for ILS structure
practical ideas
Seeing some examples of ILS, I could improve my practice
a better understanding
-
I was able to show my students a different manner of learning.
I learn more
Well structured.
others options
Now when I´m preparing a project I have to think about "how can I instigate the students and, at the same time, not give a answer".
I see how inquriy phases are related
I can use apps to support students inquiry skills
providing ideas of activities

13. Has the use of Go-Lab help you improve your ICT skills?

yes	**105**	53.3%
no	**92**	46.7%



s
Yes
yes, by using the platform and create my ILS I need to use a lot of tools
yes alredy earn knowledge can be improved in other classes
Yes. to develop content we need pedagogical and ICT skills
yes, I had to compare the use of labs on different devices
not really, it help my students skills.
No.
to use of context
more practice on ICT, and learning new skills
They start looking at ICT as a tools for learning and not just for fun
Now I can create ILS in a easy way
More knowledge
by demonstrating new tools in developing lessons platform graasp
I'm more willing to use ICT during my lessons as I feel more comfortable with the usage of the Go-Lab tools
usyng platform
I learned from other projects
The lessons have become more interesting
I learn about many real labs which go back the really data from experiments, learn about different Phet virtual labs and exchange some ideas with foreign partners
I found how to use the online labs in my lessons.
To support my activities
Not particularly. The learning model of inquiry has specific steps.
Go-Lab has helped me to create a lesson that requires the use of computers and promotes the acquisition of knowledge and inquiry skills for students
Not really. I already have adequate skills in that department and Go-lab is an easy platform to work with.
The development of my skills didn't increase by the end of the use of the Go-Lab. I have in-depth computer skills.
I have already skills for this part
Using the Go-Lab platform I improved my skills related to using online-resources.
I don’t think. The reason is because I use ICT for 20 consecutive years.
The greater use of ICT the more improvement I can obtain in this area.
No, i was already very familiar with the use of ICT in my class.
I never made an electronis lesson
Understanding how to use it
I use table, phon and lim

For using of different apps.
using virtual lans, using graasp, learning how to create an IL based activity
I got more experience in new ICT tools
Children use ICT in a more active way
For example the Conceptualization phase is divided into two (alternative) sub-phases, Questioning and Hypothesis generation. There are two tools available for each of the two sub-phases
new tools, new skills
the specifics of the portal need new knowledges
Being able to use online tools
I'm using much more apps, labs in clasroom, I'm faster in creating my lesson plan with use of ICT
I'm an ICT teacher
I learned to use ICT tools in new contexts
improving my inquiry based science lessons
I did not make electronic lessons before
Using computer, tablets or smartphone in class
Colaborative platforms
Learning how the platform works developed my skills in using different platforms
No conocia Grassp
Experience
In many ways
It was useful because I used some new apps.
new feactures
Some years ago i was more acomodated to the system... now i want to try new things.
BECAUSE THERE ARE SOME STUDENTES THAT LEAVE LOT FAR TO THE SCHOOL AND IT IS EASY STUDY WITH ITC
Definitely. In order to submit my ILS I had to improve my IT skills
to take part in various events which are proposed by Go-Lab
I have the ability to use access to information and commiunication
Science, Astronomy, technology... and I want to emphasize that we must make a commitment to unite the sciences and the arts with the humanities. This approach will make it powerful and popular science
Foarte mult
Some training, especially during the creation of an ILS in graasp.
It is well structured.
I feel I now know more about creating web tasks.
Creating ILS is fun

14. In your opinion, what is the main thing that could be improved in Go-Lab?

graasp
descriptions
f
language

speed
-
variety
labs
more online labs
For some students its hard to do this in english
Language
More labs with math topics
more labs
Better collection of students data (results and discussion) after lesson
some apps can be improved
translation of the online labs ;-)
That the system seems to be down sometimes.
More easy ILSes
stability
The search function on golabz.eu
More German ILS
publicity
you can experiment
to make it sustainable through time
the innovative use of labs in classroom ad their didactic gain for pupils
The activity of teachers community
Improve the feedback of the teachers about the used ILS in other classrooms.
few labs according students skills
I would like to use it in future
The learning process can adapt to the level of the student because they can use it from home
difusion and environment
It is attractive for pupils and you can show them things that you do no have in the school
support for offline use
Having some more labs for science subjects
some more maths, biology and science labs
If possible turn it lighter for make it easier to use with bad internet connections
Melhores e mais laboratórios
This year my pupils lost a lot of works because of the Wi-fi connections. You shoul figure out how to prevent the lost of work.
More online Labs e apps
more labs, covering a wider range of subjects
Can`t say!
having the labs and applications all working
simplify the way to make ILS and search resources.
More Labs
Parte prática
Registration

graasp editor
Bereitstellung eines vernünftigen Formelgenerators und nicht nur eines einfachen Taschenrechners; Die Editiermöglichkeiteen von mathematischen Formeln sind unzureichend
interface
fonts and colors
speed, graasp
evaluation
the search function on go-labz
the development and introduction of new mobile and virtual labs to include more universities and scientific - research centers, planetariums and museums
When you start using this platform it may be confusing at the beginning and it takes some time to understand the connection between Go-Lab and Graasp.
It could prvide more resources for primary school (6-10 years old)
learning about world around
I have no idea.
I like it
Currently , I do not know.
I think about vision of the platform - I would like to be improved the menus in an ILS, because in a tablets it's look very uncomfortable to learn and to use. It's will be nice if scratch words will placed in a box without writting on a keyboard
any
The searching/finding tool for all materials and the online databes (could be improved with advances searching criterias).
No suggestion
More activities
I need a little more experience to answer the question.
The structure of the learning environment and the many pages they make it little tedious.
Maybe a lesson can be downloaded so that it can be used offline, regardless the internet connection. in that way many technical problems can be solved.
The necessity of internet connection (the option of downloading the ILS might be a good step forward)
N/A
All the online Labs must be in all laguages
Go-Lab shall be enhanced with environment-related activities for children currently at primary school.
Loading time
I don't have something in my mind.
More apps for chemistry
I don't have something in my mind for now.
n/a
The instructions on how to use shall be more prominent.
more informations
When I used it I had difficulties with editing. Sometimes my changes were lost.
- more virtual labs.

Better descriptions of labs and materials. Selecting is still very time consuming
More activities for younger children
More support in using the apps
Ease of ordering the acticities in an ILS: I want to swap 2 activities and I feel challenged to do so.
the only problem is to have time to do all what I'd like
platform too easy
More ILS that fit the curriculum
More labs in french.
More simple
Translation of ILS, possibilities to be 1 ILS edited by different people like wikipedia.
the use of graaps, but I thinks it all ready so much better than it was.
Having the portal in more languages.
may be if the site was in more languages (including italian) my colleagues would be less afraid to try
link with google
Creating simply curricula enriched with ILSs
explain the apps (some apps are hard to use) not logic
There are probably things that could be improved but now I would not know to tell it what
a kind of ranking (teachers opinions) could be added and helpful
I dont know
to motivate children for the study of science and technology.
Work equally well on all computers and tablets
Developing subject content, although I can create an inquiry space I can't produce any animations or interactive games.
There are so many resources that it takes a lot of time to find out which ones are good of bad of useful or not
more ILSs and apps for math class
The translation in different languagues of the ILSs
I don't know yet
Always new ILS
communication
Inquiry
More ils that fit the curriculum
Deficient part of the earth sciences and health education. Missing anatomy
The plataform Graasp isn't very intuitive
More labs related to Maths
SCIENCE
El acceso a algunos laboratorios .
Ease of use
Workshops for teachers about using Go Lab facilities
Graasp
digital tools - exemples
Russian language support

None
I would like to have the possibility to download my student's answers by question, by student or a general idea of all the student's answers. I think this could be really helpful in student's assessment.
Teaching methods to science
the platform and personal contact
Non
more sugestions
"better" search (?)
Really... I think many teachers are not aware of the possibilities, neither the schools...
PLATFORM
It could be more intuitive
More apps.
some of apps would be more intuitive
More experiments!
Let's it be better known by teachers
anticipate the demands of Smart learning: start incorporating the feed back and improvement of the student, and the update connecting with augmented reality news through filters
Tutorials about some of the apps
There are more content in my area - Natural Sciences, Biology and Geology
nothing
accesibilitatea
make the search easier
More materials that I can directly use in class
Increasing the number of remote laboratories
more HTML5-based labs
Let professionals make the ILS's
Publication of the ILSs in many more languages !
to be bound by school programs
The Inquiry Spaces should be translated in Romanian because not all the children know well enough English and so they have difficulties in understanding the experiments.
i don t know
Teamwork
More online experiments
recapitulation
It could be available in more languages.
There are a lot os bugs in the colaborative APPs and some of them are not available any more.
Targeting
.
Everything is okay
I hope it continues (lasts).
Faster loading.
better navigation

more content in Estonian language
More labs
More Estonian ILS.
aaa
Estonian language support but I know that it is improving.
Keep it work
It is hard to find that supports our curriculum
More Estonian ILSis
the translation in all language
linken aan opdrachten in bestaande methodes

15. What did you like the best?

labs
ilss
support
f
the remote labs
The overview of labs
the different approche
Remote labs
ILSs
easy to acces for the childrens, creativity
content in astronomy lab
The individual work of all students
the variety of activities to choose
The freedom to put all the pieces together.
The positive reactions of the students.
The already existing ILSes and just having to hand out a link
That I only have to distribute one link
That I can use existing spaces
the access to remote labs
Experiment
f
The wide variety of labs
The new learning opportunities offered to my students
The portal in which the teachers share material, it is rich
able to use remote labs
free and useful
tutorials and structured set of resources
Using the labs
possibility of sharing scenarios with other teachers
the well structured activities and the variety of labs
Diversidade

Easy to use on classes
The easy way to use
the possiblity of assembling ILS tools
The simulations that we can`t do in classroom
the concept of the ILSs with applications
interactivity, interestting videos and pictures allied to the modern technology.
-the possibility of planning my lessons according to my needs
As aplicações
Flexibility
the variety of online labs
Verwendung von einigen brauenbaren ILS, die sich anpssen lassen
variety
the availability
the amount of labs
the ability to use real basis of scientific evidence, especially in astronomy and their involvement in classroom activities
The magnitude of possibilities it offers: possiblity to create multidisciplinary scenarios, possibility to use some parts of existing scenarios and adding them to your own scenario, interesting animations, apps and labs. It is the great source of ideas to use in your teaching practice.
IBL
all informations
I like.
teachers pages
I learned how my colleagues work
The structure of mind in an inquary base learning and many of tools to made it
any
Mostly I like that you created this online database: it's very interesting and usefull for students and teachers! Please go further with more online labs!
Teacher support
I like everything
The basic structure of the ILSs.
http://golab.ea.gr/scale/
The hypothesis formulation tool and the experimental design tool.
The plethora of labs and tools
Tools (e.g. for forming questions and hypothesis) and labs
It is easy to use, looks attractive for teachers and pupils.
the Experiment Design Tool
The usability of the platform. Go-Lab contains material that covers the needs of students of various ages.
The Graasp
The creation of a new learning space in Graasp
There is a storage place for a variety of concepts.
The apps that promote the inquiry skills.

The variety of activities that it contains.
That students can create many different hypotheses and investigate them in a virtual lab.
the format
The overview of Labs and Graasp
The best I like the apps can be added to a Inquiry Learning Space together with online labs.
Support from Go-Lab professionals
The student view
Student independence to learning and apps associated with it
online labs
the virtual laboratory
That everything is in one place
Interactivity (really appreciated by the students).
Share material
Idea to use IBSE online.
To improve my teaching methods, see how others approach STEM topic, was a eye opener. Thanks
The ILS in graasp.
the variety of resources and the pedagogical support
virtuallaboratory
I liked children, when they disovered how to manipulate elements, and creating theories
the ils in dutch
The organization of ILS
the possibility to improve my skills, to discover the others' points of view and the other methods of implementing ideas across the Europe
I dont know
Inquiry based science education is a suitable method for the science education of all groups of students
portal of many labs
The interactive parts that I can build my learning space around
That everything is in one website, but still it costs much time to select the right things
ILSs, apps, meating other teachers, corresponding with other teacher and sharing experiences
The simply way using the plateform
The connexion with the real scientific world with the access to online resources.
The chance to make students reflecting on IBSE
onlinelabore
inquiry
That everything is in one websitr
chemistry and physics experiments
The database of laboratories
I like the aspect and being easy to work and free
VIRTUAL LABS
Tener accesibles tantos recursos en un solo lugar.
Variety, support

Resources from optics (about light)
Science and technology(STEM) and others
N/A
Everything
Well, I really love to see my students expressions when they are doing ILS. They are always so motivated, interested an having fun also! Even those students with lower grades are committed and that it's great!
Apps
teachers interaction
I like eveyrthing, the Idea, the Possibilities, everything is trully great.
Evolution
easy to use / creativity & sharing / fast
Planning
VIRTUAL LABORTORY
interactive online labs
It's full of ideas for almost every lesson
very high possibility to create your own scenarios or to use virtual labs
I like doing experiments with my students and I enjoy the idea that led to the realization of this project.
The new approch.
Structure and the possibility of updating the material in the orientation phase, and experimentation
The ability for organising the diferent materials
some apps
the opportunity to use online and remote labs
Digital features
is easy to work
traducerea automata in limba romana
The ILS.
The list with labs/simulations that are availa le
good teaching tool
diversity of ILSs that I can already use in my lessons
The collection of all those usefull labs
Many valuable and exciting ideas and suggestions.
-
construction of hypotheses interactivity
My favourite Inquiry space is Splash.
The methods of work
Applications
The design and animation
many pictures
The design of the website.

The method, and the way that it not close a good opportunity to think about a hypothesis. Like, the last part of a project is to discuss about and not conclude something.
Ease of use
.
golabz is teacher friendly
Variety of different labs
Estonian language materials.
easy to read font
ready-made content that to use
Lots of physics labs
Good design. Nice colours.
aaaa
Intecreation of PHeT labs and that I can use tablet comupters
There are so many options to use.
I found some labs to use in my lessons
Very easy to find labs that I can immediately use
virtual lab
de mogelijkheid om praktica buiten de klas uit te voeren

16. What did you like the least?

speed
f
-
graasp
Nothing
descriptions
nothing
language
N/A
sometimes the platform doesn't work
if it doesnt work
Technical problems
Translating other ILSs to croatian language
no coment
I didn t understend everything
some labs that require software plugins
broken links
Nothing.
the time spent
That some apps do not load sometimes
Sometimes there are problems with the apps
search topics?
It would be interesting to maintain the project more than four years

c
f
The amount of time I have to use in GoLab. And some labs do not have a manual and are not easy to use
sometimes the remote labs failed and I did not know why.
It is not easy to find the adequated ILS. I need to open and read
just a bit complex and complicated
non diversity of didactic approaches
some informatic difficulties
difficulty in relating the scenarios with the curriculum
Not allways could use because of the internet conection
Visualização
Theachers are not sharing they ILSs
Sometimes it stuck's
some tools / labs dont work properly, I think has something to do with JAVA. Time consumming but that is NOT GOLAB fault, it came with the job.
The language;
things not working!
complexity of the sistem
Not to have a kind of rate to tell me the best ILS for the level and the curriculum i have in my country
Sem opinião
Difficulty in producing good lab guides
graasp editor
Formelgenerator, bescheidener Taschenrechner
authoring
the search function
no
Not all apps are clear to use, they are too complicated or we don't know what for we should use them. Sometimes from the description of an app is difficult to see how to use it practice.
I had no contact with the GoLab team in my country
anything
I like.
I do not have
..for any time too short
The time which I spend in a creation of one ILS
none
We hope that we'll be eligible to become an official partner school in this project.
No sugestion
I can not say
I don`t like the lists of the ILSs obove the window with the ILS, which I edit.
The continuous back and forward process in order to use a combination of tools.
There is nothing i did not like.

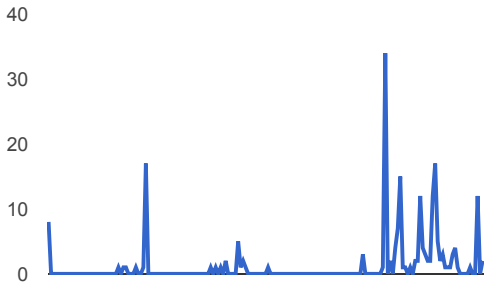
The problems that might occur with the slow internet connection
There is a need for a good internet connection.
there are not enough laps for small ages
Although Go-Lab provides multiple activities, they are often not available in Greek.
I do not have an opinion.
There are not enough for chemistry
Sometimes apps loading in an ILS takes enough time.
Nothing
The way that instructions are given it could be more simple
the correspondence with the curricula
Sometimes, Go-Lab loads slow.
See question 14
It's a bit difficult to get started for primary teachers
Fear of planning a whole lesson and the internet let me down.
some apps
grassp
Zee 14
None.
To few iLS in french
Navigation is not fast.
deal with the complex graaps environment
learning how to use the apps in graasp; you spend a lot of time.
gassp
Time consuming for the lessons. We need to create more organic curricula, as we need to complete a course and evaluate children.
All the ils in other languages (not dutch-english-french)
problems with internet connections, but I realize it's not due to Go-Lab :)
I dont know
Grasp feels odd and slow to use. Lessons seem to work on one computer and not another,
Would be nice to have an example inquiry space for topics that can be edited, if this is already available I need to find it
I don't have the time to make my own ILS

Really nothing
not all applications work
Time necessary to prepare a ILS
viel text
english version
That my lesson is in the cloud and i don't have a hardcopy
the biology experiments are not suitable for high school students
The need to use two different platforms
the platform evolved a lot since the beginning so, now I don't really have anything I don't like
TOO LABS IN ENGLISH

No tener tiempo personal para diseñar mi propia ILS
Compexicity
Resources that are to complicated
hypothesis
I don't have subjects that I don't like
The beginning...it was difficult for me create an ILS by myself. NUCLIO staff helped me a lot in a webinar and then I was able to do it.
N/ A
Short time on my case
The time that is required to do a good ILS
GRAASP
some apps don't work
Maybe it would be nice to have a bookmark of favourites. The best scenarios that everyone would like.
some apps require long time to understand how they are working
Nothing. Good luck!
In my opinion it is missing, or not be used, elements add notes about a student's work "on line" and to be collected in an automated fashion
The page takes too long loading
Be very little thing in my area.
It is difficult to put equations in the program
Nu stiu
The lack of a computer room at school that allows a regular use of them by the students is the limiting step in the use of tools and ILS available in Go-Lab
I tried to make an ILS but iT takes too much time
The setting and operation of certain laboratories
Maybe that sometimes tools are too slow.
It was hard to find the right lab
that the project unfortunately ends ...
lack of training time
I didn't find an Inquiry space about heat and measurement of the heat.
aoanly a few hours for this course
It's not necessary.
too easily for the students, no problems,
There is nothing I can complain about.
.
simplicity
.
I think I do not have time to use all the benefits of Go-Lab
Maybe golabz is not available in Estonian.
Some apps are slow.
hard to use
not much content in Estonian language

Not very many Estonian ILSes
Few Estonina ILS.
aaa
Like I wrote language issues
Sometimes Graasp is not working but maybe it is my bad internet.
Graasp is to difficult for me.
Lack of Estonian ILSes
it was only in English
de relatief saaie layout

Number of daily responses

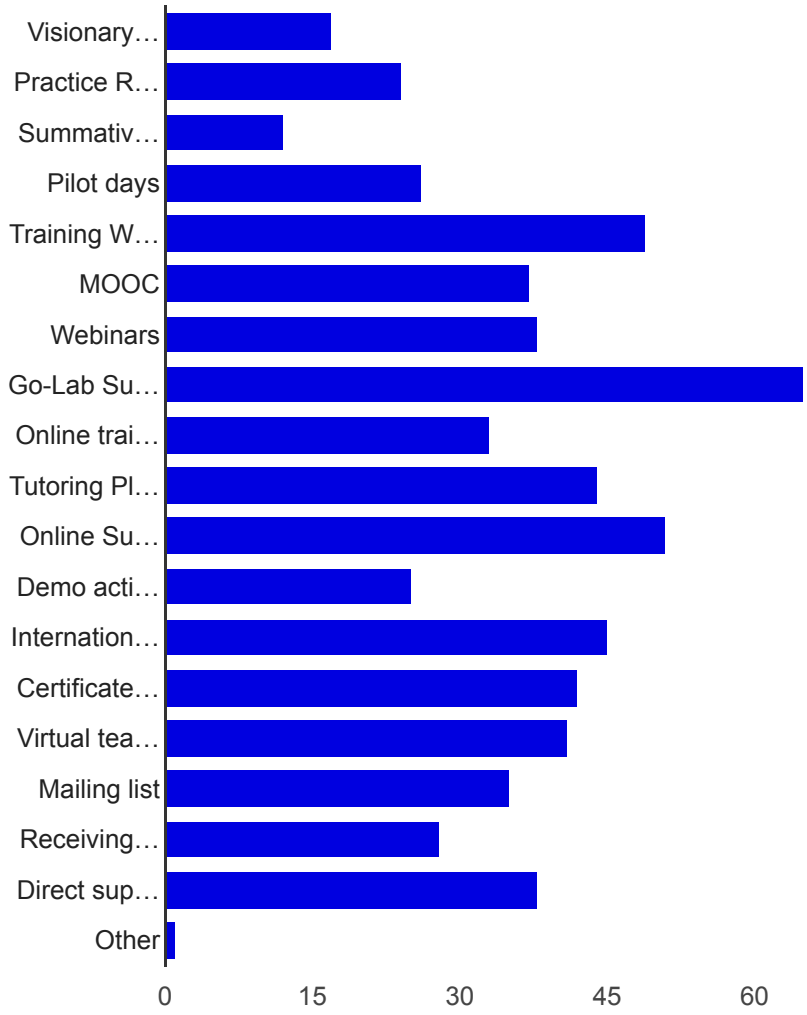


70 responses

View all responses Publish analytics

Summary

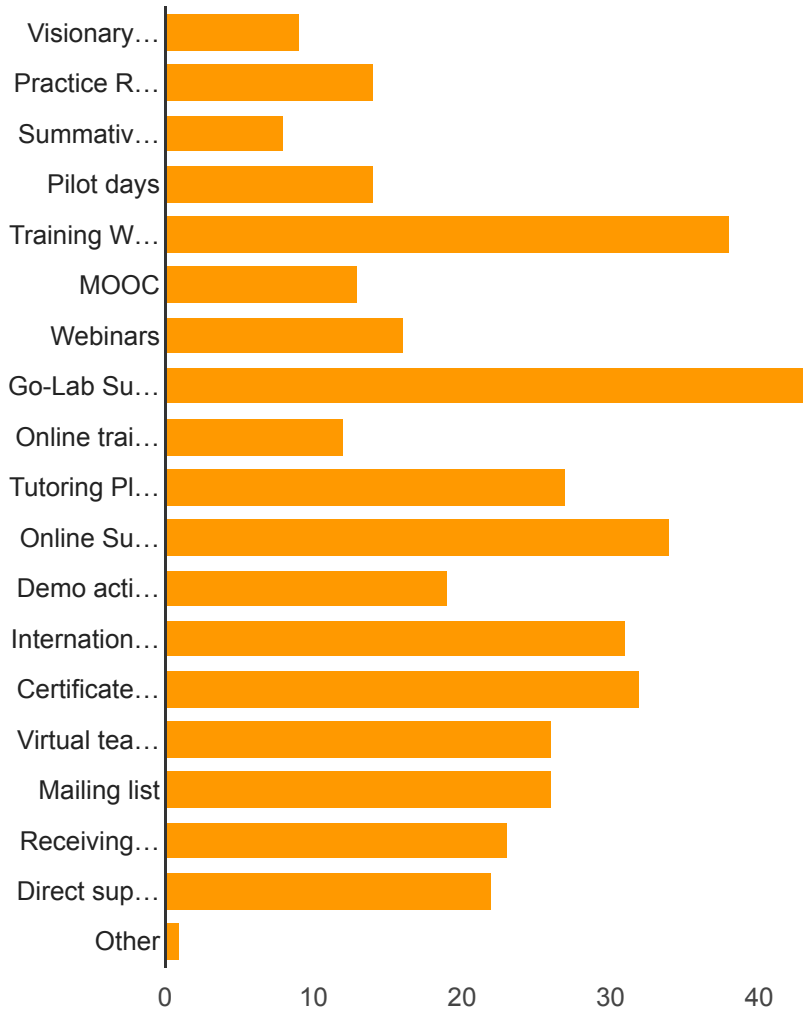
1. Which of these support tools or activities did you know exist? (More than one answer is possible)



Visionary Workshops	**17**	24.3%
Practice Reflection Workshops	**24**	34.3%
Summative Workshops	**12**	17.1%
Pilot days	**26**	37.1%
Training Workshops	**49**	70%
MOOC	**37**	52.9%
Webinars	**38**	54.3%

Go-Lab Summer schools	**65**	92.9%
Online training workshops	**33**	47.1%
Tutoring Platform (tutoring.golabz.eu)	**44**	62.9%
Online Support page and material (http://www.golabz.eu/support)	**51**	72.9%
Demo activities in schools	**25**	35.7%
International contests	**45**	64.3%
Certificates of participation in training events	**42**	60%
Virtual teachers' communities (e.g. Facebook)	**41**	58.6%
Mailing list	**35**	50%
Receiving direct support from one of my colleagues	**28**	40%
Direct support from / contact with Go-Lab partner	**38**	54.3%
Other	**1**	1.4%

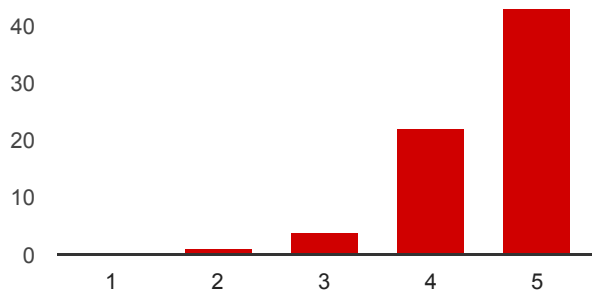
2. In which of the supporting tools & activities have you personally used or participated in? (More than one answer is possible)



Visionary Workshops	**9**	12.9%
Practice Reflection Workshops	**14**	20%
Summative Workshops	**8**	11.4%

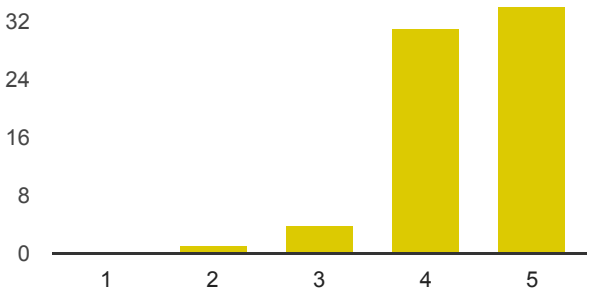
Pilot days	**14**	20%
Training Workshops	**38**	54.3%
MOOC	**13**	18.6%
Webinars	**16**	22.9%
Go-Lab Summer schools	**43**	61.4%
Online training workshops	**12**	17.1%
Tutoring Platform (http://tutoring.golabz.eu/)	**27**	38.6%
Online Support page and material (http://www.golabz.eu/support)	**34**	48.6%
Demo activities in schools	**19**	27.1%
International contests	**31**	44.3%
Certificates of participation in training events	**32**	45.7%
Virtual teachers' communities (e.g. Facebook)	**26**	37.1%
Mailing list	**26**	37.1%
Receiving direct support from one of my colleagues	**23**	32.9%
Direct support from / contact with Go-Lab partner	**22**	31.4%
Other	**1**	1.4%

3. Do you consider the overall support in Go-Lab offered and received as adequate?

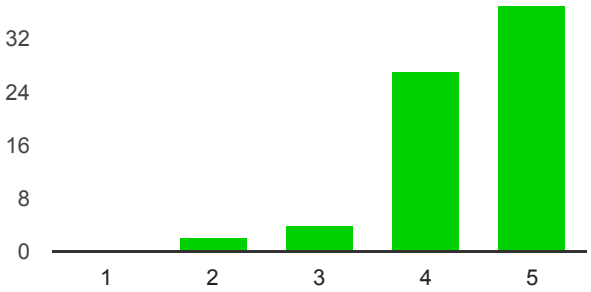


Not adequate at all: 1	**0**	0%
2	**1**	1.4%
3	**4**	5.7%
4	**22**	31.4%
Highly adequate: 5	**43**	61.4%

4. Do you consider the overall physical / on-site support in Go-Lab offered and received as suitable?

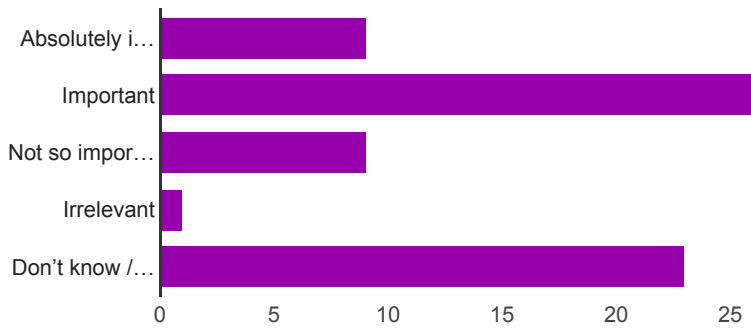


5. Do you consider the overall virtual / online support in Go-Lab offered and received as suitable?



Not suitable at all : 1	**0**	0%
2	**2**	2.9%
3	**4**	5.7%
4	**27**	38.6%
Highly suitable: 5	**37**	52.9%

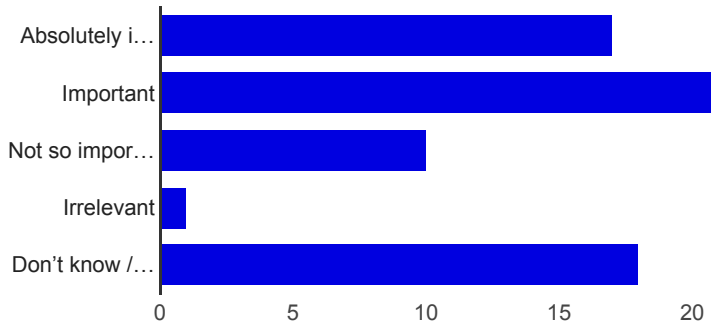
Visionary Workshops [6. Which of the support tools & activities do you consider to be the most important for your participation in Go-Lab?]



Absolutely important	**9**	12.9%
Important	**28**	40%
Not so important	**9**	12.9%
Irrelevant	**1**	1.4%

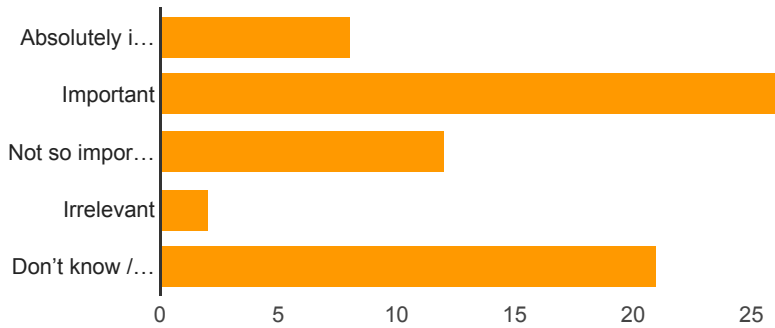
Don’t know / Was not aware	**23**	32.9%

Practice Reflection Workshops [6. Which of the support tools & activities do you consider to be the most important for your participation in Go-Lab?]



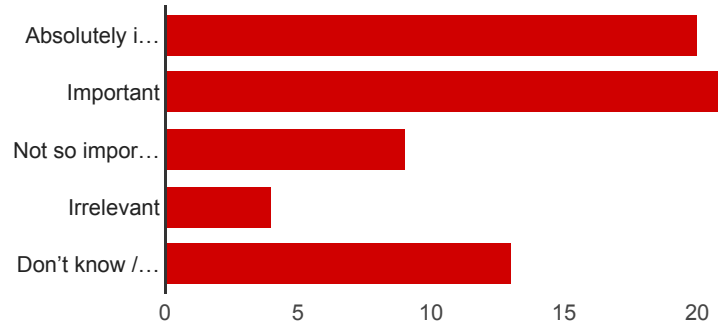
Absolutely important	**17**	24.3%
Important	**24**	34.3%
Not so important	**10**	14.3%
Irrelevant	**1**	1.4%
Don’t know / Was not aware	**18**	25.7%

Summative Workshops [6. Which of the support tools & activities do you consider to be the most important for your participation in Go-Lab?]



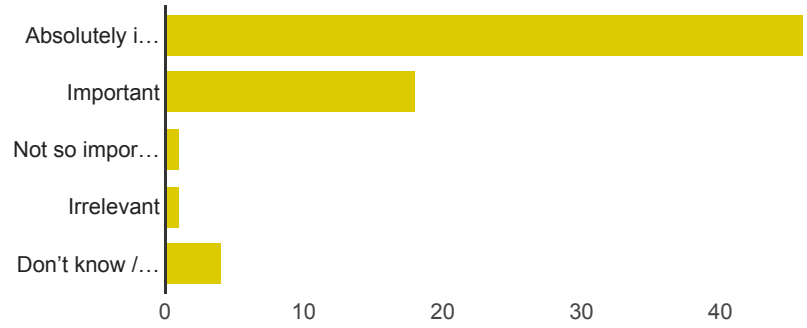
Absolutely important	**8**	11.4%
Important	**27**	38.6%
Not so important	**12**	17.1%
Irrelevant	**2**	2.9%
Don’t know / Was not aware	**21**	30%

Pilot days [6. Which of the support tools & activities do you consider to be the most important for your participation in Go-Lab?]



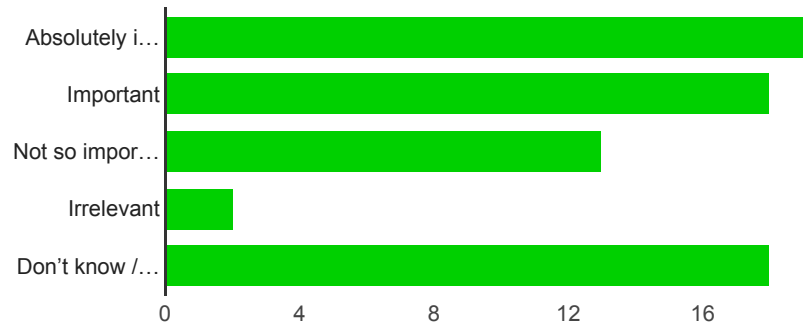
Don't know / Was not aware	**13**	18.6%

Training Workshops [6. Which of the support tools & activities do you consider to be the most important for your participation in Go-Lab?]



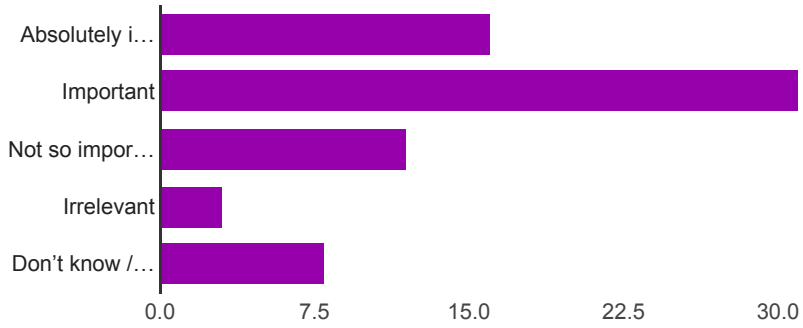
Absolutely important	**46**	65.7%
Important	**18**	25.7%
Not so important	**1**	1.4%
Irrelevant	**1**	1.4%
Don't know / Was not aware	**4**	5.7%

MOOC [6. Which of the support tools & activities do you consider to be the most important for your participation in Go-Lab?]



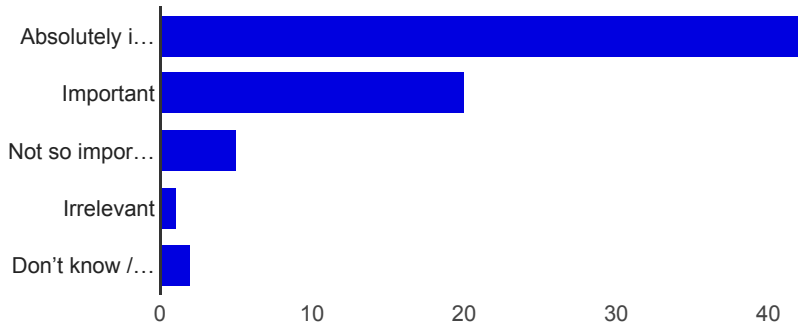
Absolutely important	**19**	27.1%
Important	**18**	25.7%
Not so important	**13**	18.6%
Irrelevant	**2**	2.9%
Don't know / Was not aware	**18**	25.7%

Webinars [6. Which of the support tools & activities do you consider to be the most important for your participation in Go-Lab?]



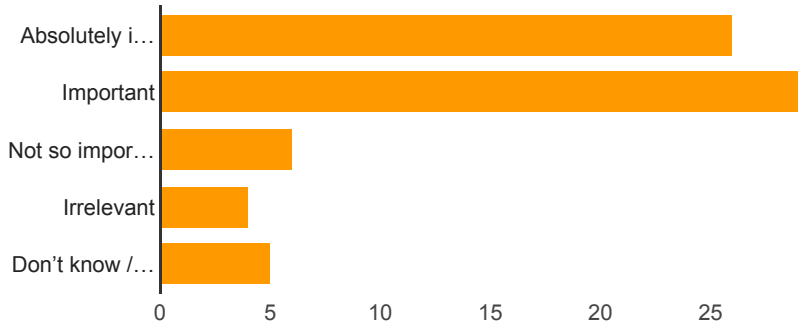
Absolutely important	**16**	22.9%
Important	**31**	44.3%
Not so important	**12**	17.1%
Irrelevant	**3**	4.3%
Don’t know / Was not aware	**8**	11.4%

Go-Lab Summer schools [6. Which of the support tools & activities do you consider to be the most important for your participation in Go-Lab?]

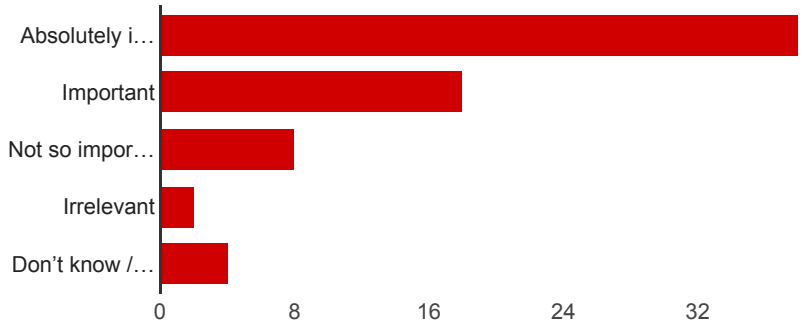


Absolutely important	**42**	60%
Important	**20**	28.6%
Not so important	**5**	7.1%
Irrelevant	**1**	1.4%
Don’t know / Was not aware	**2**	2.9%

Online training workshops [6. Which of the support tools & activities do you consider to be the most important for your participation in Go-Lab?]

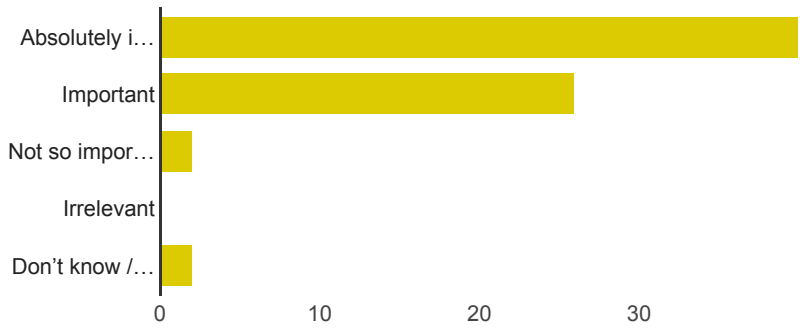


Tutoring Platform (http://tutoring.golabz.eu/) [6. Which of the support tools & activities do you consider to be the most important for your participation in Go-Lab?]



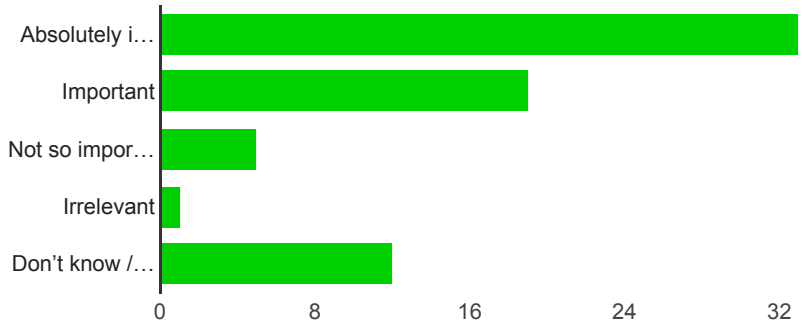
Absolutely important	**38**	54.3%
Important	**18**	25.7%
Not so important	**8**	11.4%
Irrelevant	**2**	2.9%
Don’t know / Was not aware	**4**	5.7%

Online Support page and material (http://www.golabz.eu/support) [6. Which of the support tools & activities do you consider to be the most important for your participation in Go-Lab?]



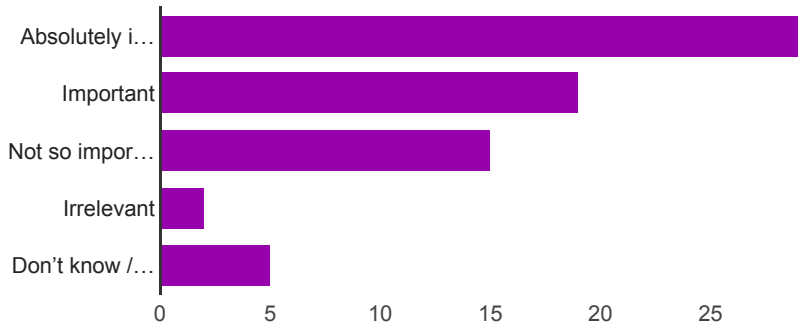
Absolutely important	**40**	57.1%
Important	**26**	37.1%
Not so important	**2**	2.9%
Irrelevant	**0**	0%
Don’t know / Was not aware	**2**	2.9%

Demo activities in schools [6. Which of the support tools & activities do you consider to be the most important for your participation in Go-Lab?]



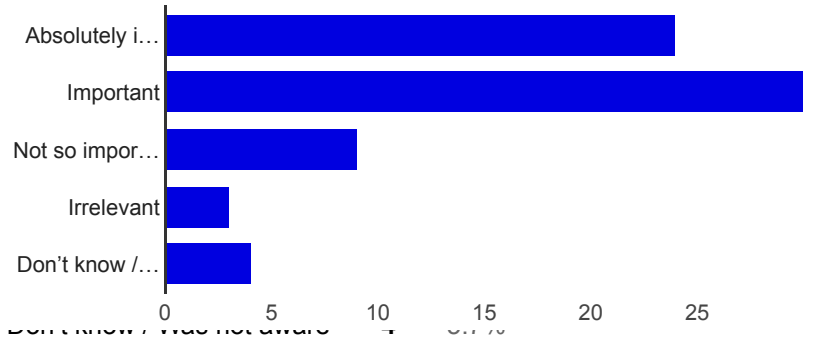
Absolutely important	**33**	47.1%
Important	**19**	27.1%
Not so important	**5**	7.1%
Irrelevant	**1**	1.4%
Don't know / Was not aware	**12**	17.1%

International contests [6. Which of the support tools & activities do you consider to be the most important for your participation in Go-Lab?]

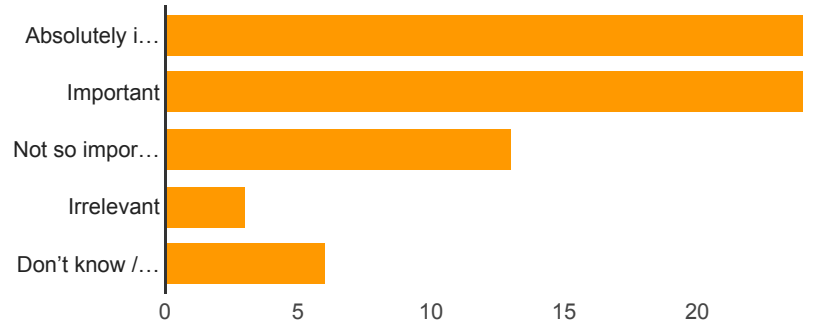


Absolutely important	**29**	41.4%
Important	**19**	27.1%
Not so important	**15**	21.4%
Irrelevant	**2**	2.9%
Don't know / Was not aware	**5**	7.1%

Certificates of participation in training events [6. Which of the support tools & activities do you consider to be the most important for your participation in Go-Lab?]

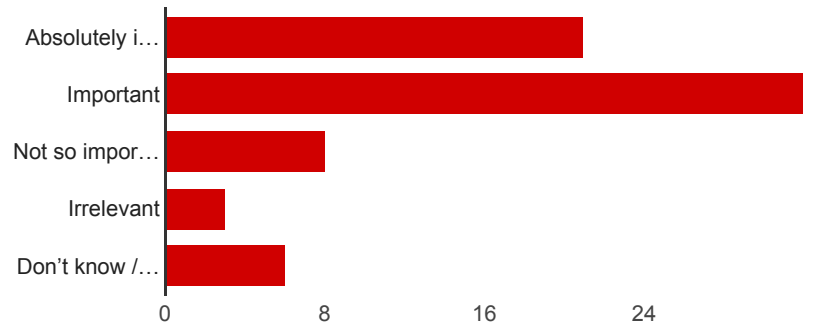


Virtual teachers' communities (e.g. Facebook) [6. Which of the support tools & activities do you consider to be the most important for your participation in Go-Lab?]



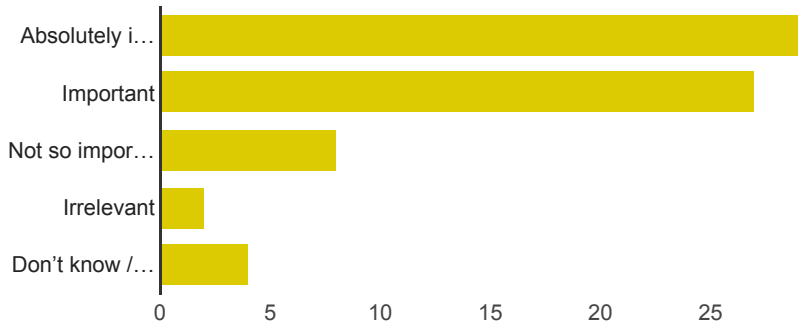
Absolutely important	**24**	34.3%
Important	**24**	34.3%
Not so important	**13**	18.6%
Irrelevant	**3**	4.3%
Don't know / Was not aware	**6**	8.6%

Mailing list [6. Which of the support tools & activities do you consider to be the most important for your participation in Go-Lab?]



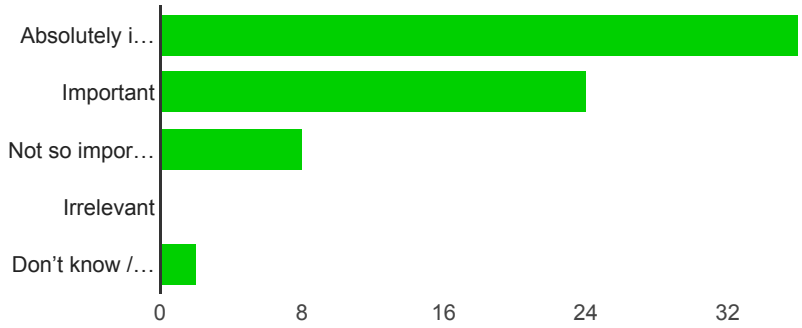
Absolutely important	**21**	30%
Important	**32**	45.7%
Not so important	**8**	11.4%
Irrelevant	**3**	4.3%
Don't know / Was not aware	**6**	8.6%

Receiving direct support from one of my colleagues [6. Which of the support tools & activities do you consider to be the most important for your participation in Go-Lab?]



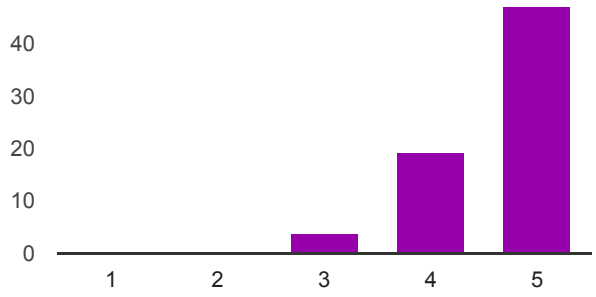
Absolutely important	**29**	41.4%
Important	**27**	38.6%
Not so important	**8**	11.4%
Irrelevant	**2**	2.9%
Don't know / Was not aware	**4**	5.7%

Direct contact with Go-Lab project partner [6. Which of the support tools & activities do you consider to be the most important for your participation in Go-Lab?]



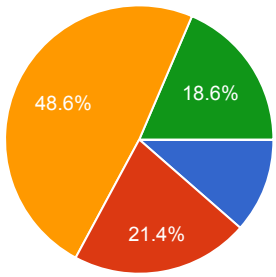
Absolutely important	**36**	51.4%
Important	**24**	34.3%
Not so important	**8**	11.4%
Irrelevant	**0**	0%
Don't know / Was not aware	**2**	2.9%

7. How would you rate the overall usefulness of the supporting tools & activities in understanding the principles of Inquiry Based Science Education (IBSE)? (workshop)



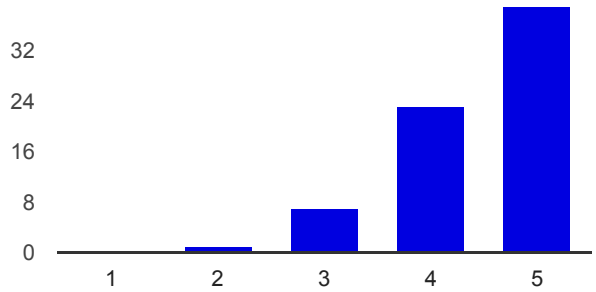
4	**19**	27.1%
Very useful: 5	**47**	67.1%

8. Would you have created a ILS without the support tools & activities offered in Go-Lab?



Yes, I didn't need the support	**8**	11.4%
Probably yes, it was easy to do so	**15**	21.4%
Probably not, it would have been rather difficult	**34**	48.6%
No, I couldn't have done it without it	**13**	18.6%
Other	**0**	0%

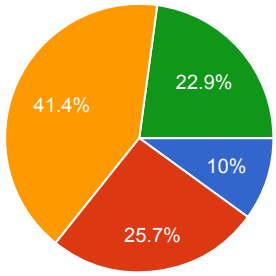
9. How would you rate the overall usefulness of the supporting tools & activities for the creation of a ILS on the Graasp platform?



Not useful at all : 1	**0**	0%
2	**1**	1.4%
3	**7**	10%
4	**23**	32.9%

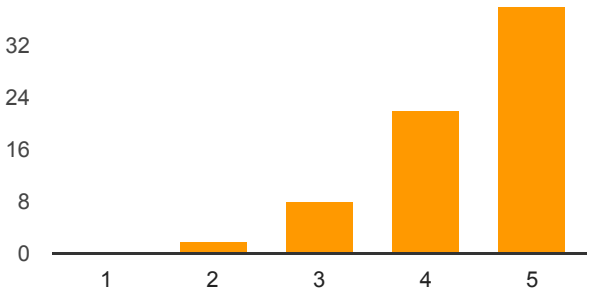
Very useful: 5	**39**	55.7%

10. Would you have implemented a ILS without the support tools & activities offered in Go-Lab?



Yes, I didn't need the support	**7**	10%
Probably yes, it was easy to do so	**18**	25.7%
Probably not, it would have been rather difficult	**29**	41.4%
No, I couldn't have done it without it	**16**	22.9%
Other	**0**	0%

11. How would you rate the overall usefulness of the supporting tools & activities for the implementation of an ILS within an educational setting?



Not useful at all : 1	**0**	0%
2	**2**	2.9%
3	**8**	11.4%
4	**22**	31.4%
Very useful: 5	**38**	54.3%

12. Please name the type or kind of support you would have liked to received but was missing that could have helped you to better use and implement an ILS?

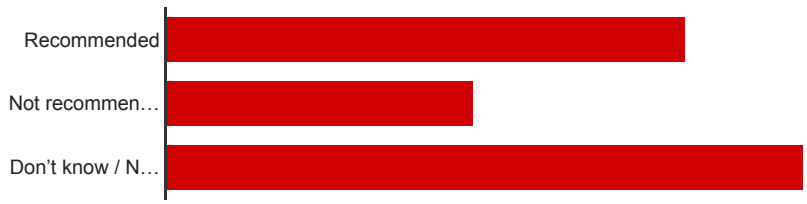
None
none
N/A
Having someone to share the lesson with ILs

Ajuda na programação dos sensores utilizados nos robots lego mindstorms
T received all the support I asked for.
More apps
dropfile
I d'ont remember
I don't remember
a physical book, made of paper . Its easier to consult
webinars
More training in Graasp.
didirect support from one of my colleagues
Webinars
cant think any
nothing
certificate from ministry of edu
more computers for my school
Online support with someone available to answer my questions at certain time
I didn't need anything else.
Don't need
I had all the support needed
beter school suport
Feedback work of students
Information about how write chemical formules
Really, my problem is the lack of Internt connection and computers at my school.
Your work is absolutely brilliant. You practicalyy have thought everything a person would need.
i received all the support
Help to find some virtual labs
None
The support provided was sufficient.
The support was enough
a kind of ranking - e.g. teachers' opinions
don t know
I learnt a lot with my colleagues and my tutor in Summer School and i received there all the support I needed. Before that event I also received support during a useful webinar about Go-Lab promoted by NUCLIO.
a support in Romanian language
IBSE
In lesser extent, the language of the platform - English. From personal experience and trainings with teachers and discussions, they prefer their mother tongue
not found
Direct support from colleague with experinece in GoLab or in ILS.
Maybe it's good to make some jigsaw in different patterns

MOOC
Graasp help with search for the components of ILS
more math apps and ILSs for primary education
Now, the platform is stabilized, so I can do it by myself

Online contacts from one of my colleagues
I was lucky to attend Go-Lab summer school, so I had most of the information I needed. The email conduct with the Go-Lab team solve any kind of questions and problems. I
More information in schools
My language
Vidéo supports
Trainning workshop
I can not mention
Visionary Workshops
Some remote labs are a bit complicated to use, so some more tutorials or some examples of activities with all the instructions needed.
i dont know
Short manual/tutorial on how to use the different labs (some of them have no manual at all and it is struggling to find out), I would make that mandatory to have a lab or app in the GOLABZ portal
Support in my own language
Without answer
tutorials
NONE
I don`t know
-

Visionary Workshops [13. Have you recommended any of the supporting tools & activities to any of your colleagues?]

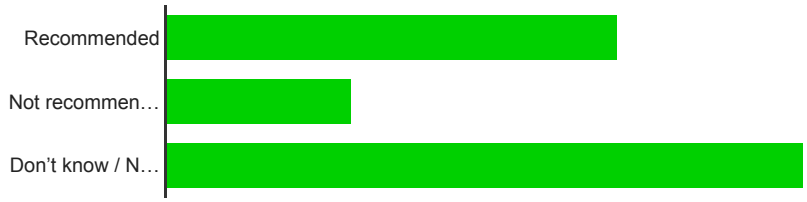


Recommended	**22**	35.5%
Not recommended	**13**	21%
Don’t know / Not aware	**27**	43.5%

Practice Reflection Workshops [13. Have you recommended any of the supporting tools & activities to any of your colleagues?]

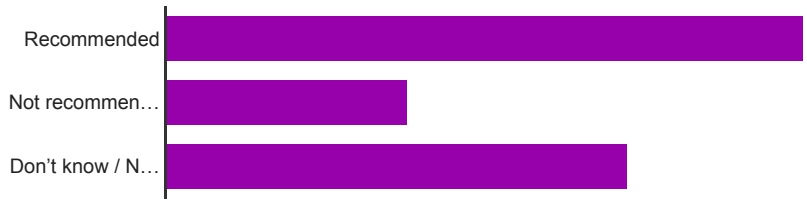
Recommended	**24**	40%
Not recommended	**11**	18.3%
Don't know / Not aware	**25**	41.7%

Summative Workshops [13. Have you recommended any of the supporting tools & activities to any of your colleagues?]



Recommended	**22**	35.5%
Not recommended	**9**	14.5%
Don't know / Not aware	**31**	50%

Pilot days [13. Have you recommended any of the supporting tools & activities to any of your colleagues?]



Recommended	**29**	47.5%
Not recommended	**11**	18%
Don't know / Not aware	**21**	34.4%

Training Workshops [13. Have you recommended any of the supporting tools & activities to any of your colleagues?]

Don't know / Not aware	**9**	14.3%

MOOC [13. Have you recommended any of the supporting tools & activities to any of your colleagues?]

Recommended	**28**	45.2%
Not recommended	**10**	16.1%
Don't know / Not aware	**24**	38.7%

Webinars [13. Have you recommended any of the supporting tools & activities to any of your colleagues?]

Recommended	**35**	55.6%
Not recommended	**15**	23.8%
Don't know / Not aware	**13**	20.6%

Go-Lab Summer schools [13. Have you recommended any of the supporting tools & activities to any of your colleagues?]

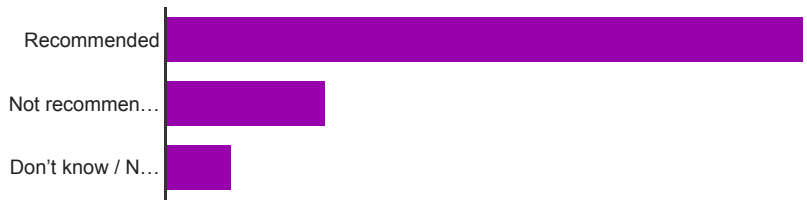
Recommended	**59**	88.1%
Not recommended	**4**	6%

Don’t know / Not aware	**4**	6%

Online training workshops [13. Have you recommended any of the supporting tools & activities to any of your colleagues?]

Recommended	**50**	76.9%
Not recommended	**9**	13.8%
Don’t know / Not aware	**6**	9.2%

Tutoring Platform (http://tutoring.golabz.eu/) [13. Have you recommended any of the supporting tools & activities to any of your colleagues?]



Recommended	**48**	73.8%
Not recommended	**12**	18.5%
Don’t know / Not aware	**5**	7.7%

Online Support page and material (http://www.golabz.eu/support) [13. Have you recommended any of the supporting tools & activities to any of your colleagues?]

Recommended	**50**	79.4%
Not recommended	**8**	12.7%
Don’t know / Not aware	**5**	7.9%

Demo activities in schools [13. Have you recommended any of the supporting tools & activities to any of your colleagues?]

Recommended	**34**	52.3%
Not recommended	**12**	18.5%
Don't know / Not aware	**19**	29.2%

International contests [13. Have you recommended any of the supporting tools & activities to any of your colleagues?]

Recommended	**47**	74.6%
Not recommended	**10**	15.9%
Don't know / Not aware	**6**	9.5%

Certificates of participation in training events [13. Have you recommended any of the supporting tools & activities to any of your colleagues?]

Recommended	**36**	58.1%
Not recommended	**15**	24.2%
Don't know / Not aware	**11**	17.7%

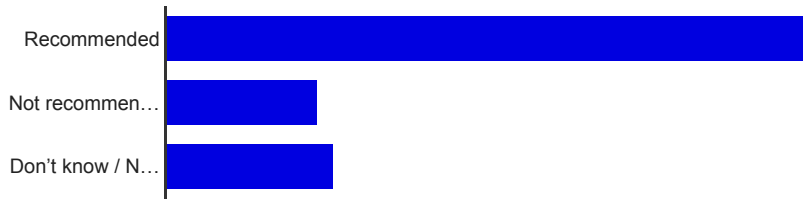
Virtual teachers' communities (e.g. Facebook) [13. Have you recommended any of the supporting tools & activities to any of your colleagues?]

Recommended	**35**	55.6%
Not recommended	**19**	30.2%
Don't know / Not aware	**9**	14.3%

Mailing list [13. Have you recommended any of the supporting tools & activities to any of your colleagues?]

Recommended	**32**	50%
Not recommended	**21**	32.8%
Don't know / Not aware	**11**	17.2%

Receiving direct support from one of my colleagues [13. Have you recommended any of the supporting tools & activities to any of your colleagues?]

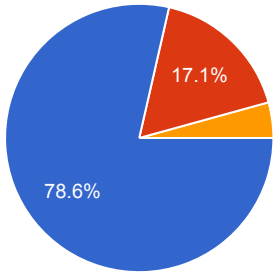


Recommended	**42**	66.7%
Not recommended	**10**	15.9%
Don't know / Not aware	**11**	17.5%

Direct support from / contact with Go-Lab partner [13. Have you recommended any of the supporting tools & activities to any of your colleagues?]

Recommended	**41**	66.1%
Not recommended	**9**	14.5%
Don't know / Not aware	**12**	19.4%

14. Have you encouraged, engaged or trained any of your colleagues in the use of Go-Lab?



Yes	**55**	78.6%
No	**12**	17.1%
Other	**3**	4.3%

Visionary Workshops [15. Which of the support tools & activities have you used in the engaging, promoting or training colleagues in the use Go-Lab?]

Used	**9**	12.9%
Not used	**39**	55.7%
Don't know / Not aware	**22**	31.4%

Practice Reflection Workshops [15. Which of the support tools & activities have you used in the engaging, promoting or training colleagues in the use Go-Lab?]

Used	**12**	17.1%
Not used	**35**	50%
Don't know / Not aware	**23**	32.9%

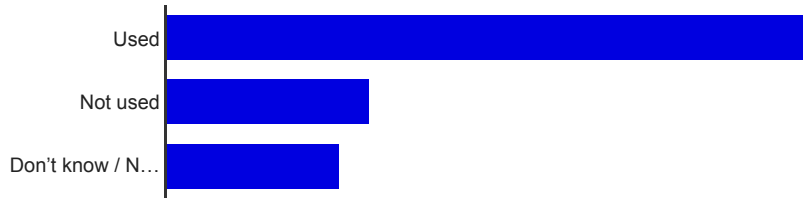
Summative Workshops [15. Which of the support tools & activities have you used in the engaging, promoting or training colleagues in the use Go-Lab?]

Don't know / Not aware	**25**	35.7%

Pilot days [15. Which of the support tools & activities have you used in the engaging, promoting or training colleagues in the use Go-Lab?]

Used	**17**	24.3%
Not used	**32**	45.7%
Don't know / Not aware	**21**	30%

Training Workshops [15. Which of the support tools & activities have you used in the engaging, promoting or training colleagues in the use Go-Lab?]



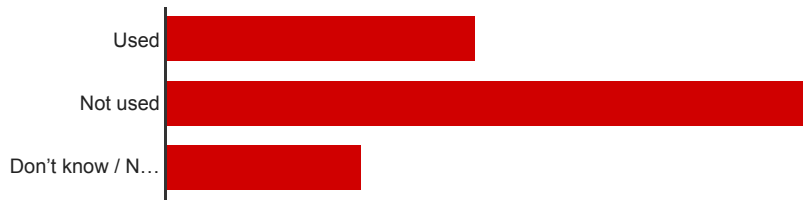
Used	**44**	62.9%
Not used	**14**	20%
Don't know / Not aware	**12**	17.1%

MOOC [15. Which of the support tools & activities have you used in the engaging, promoting or training colleagues in the use Go-Lab?]

Used	**12**	17.1%
Not used	**39**	55.7%

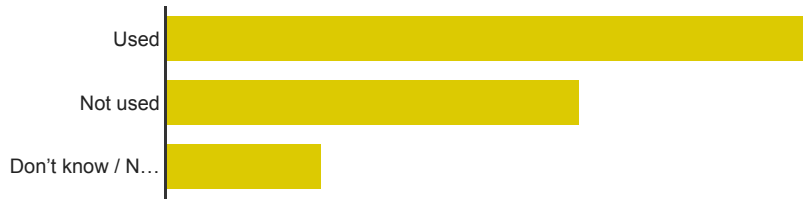
Don't know / Not aware	**19**	27.1%

Webinars [15. Which of the support tools & activities have you used in the engaging, promoting or training colleagues in the use Go-Lab?]



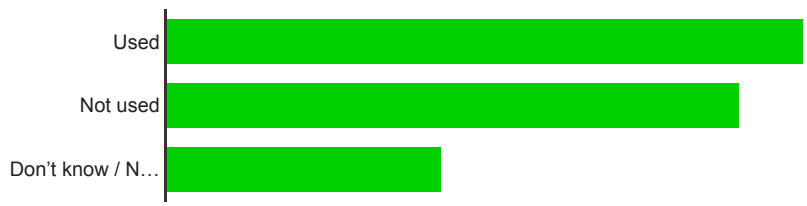
Used	**19**	27.1%
Not used	**39**	55.7%
Don't know / Not aware	**12**	17.1%

Summer schools [15. Which of the support tools & activities have you used in the engaging, promoting or training colleagues in the use Go-Lab?]



Used	**37**	52.9%
Not used	**24**	34.3%
Don't know / Not aware	**9**	12.9%

Online training workshops [15. Which of the support tools & activities have you used in the engaging, promoting or training colleagues in the use Go-Lab?]

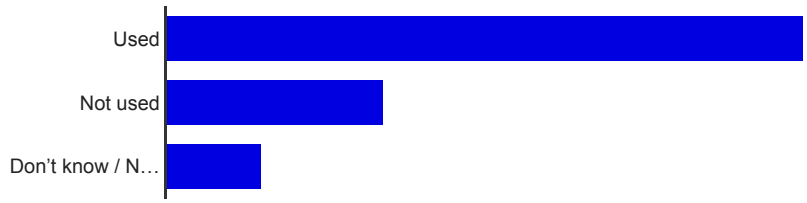


Used	**30**	42.9%
Not used	**27**	38.6%
Don't know / Not aware	**13**	18.6%

Tutoring Platform (http://tutoring.golabz.eu/) [15. Which of the support tools & activities have you used in the engaging, promoting or training colleagues in the use Go-Lab?]

Used	**38**	54.3%
Not used	**24**	34.3%
Don't know / Not aware	**8**	11.4%

Online Support page and material (http://www.golabz.eu/support) [15. Which of the support tools & activities have you used in the engaging, promoting or training colleagues in the use Go-Lab?]



Used	**47**	67.1%
Not used	**16**	22.9%
Don't know / Not aware	**7**	10%

Demo activities in schools [15. Which of the support tools & activities have you used in the engaging, promoting or training colleagues in the use Go-Lab?]

Used	**30**	42.9%
Not used	**22**	31.4%
Don't know / Not aware	**18**	25.7%

International contests [15. Which of the support tools & activities have you used in the engaging, promoting or training colleagues in the use Go-Lab?]

Certificates of participation in training events [15. Which of the support tools & activities have you used in the engaging, promoting or training colleagues in the use Go-Lab?]

Used	**25**	35.7%
Not used	**35**	50%
Don't know / Not aware	**10**	14.3%

Virtual teachers' communities (e.g. Facebook) [15. Which of the support tools & activities have you used in the engaging, promoting or training colleagues in the use Go-Lab?]

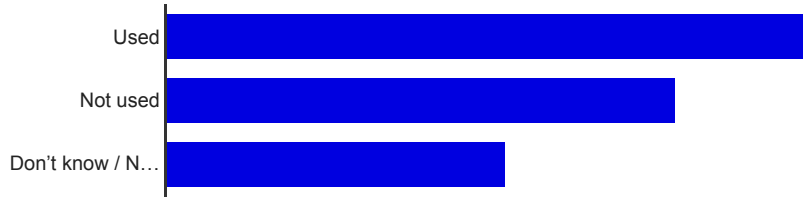
Used	**26**	37.1%
Not used	**33**	47.1%
Don't know / Not aware	**11**	15.7%

Mailing list [15. Which of the support tools & activities have you used in the engaging, promoting or training colleagues in the use Go-Lab?]

Used	**24**	34.3%
Not used	**31**	44.3%

Don't know / Not aware	**15**	21.4%

Receiving direct support from one of my colleagues [15. Which of the support tools & activities have you used in the engaging, promoting or training colleagues in the use Go-Lab?]

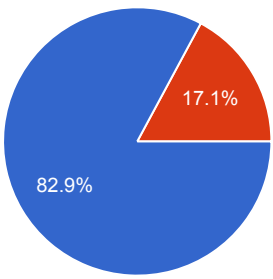


Used	**30**	42.9%
Not used	**24**	34.3%
Don't know / Not aware	**16**	22.9%

Direct support from / contact with Go-Lab partner [15. Which of the support tools & activities have you used in the engaging, promoting or training colleagues in the use Go-Lab?]

Used	**30**	42.9%
Not used	**28**	40%
Don't know / Not aware	**12**	17.1%

16. Are you in regular contact with other Go-Lab teachers outside of your school (e.g. through email, Facebook, physical meetings, etc.)?

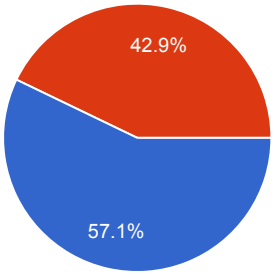


Yes	**58**	82.9%
No	**12**	17.1%
Other	**0**	0%

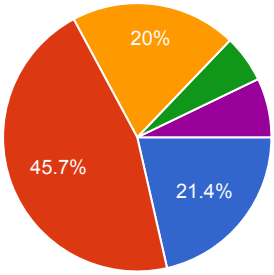
17. Are you in regular contact with other Go-Lab teachers outside of your country (e.g. through email, Facebook, physical meetings, etc.)?

Yes	**40**	57.1%
No	**30**	42.9%

Other	**0**	0%

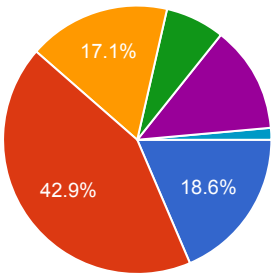


18. How many of ILSs have you created in Graasp?



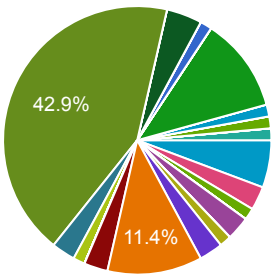
1	**15**	21.4%
2-3	**32**	45.7%
4-6	**14**	20%
7-10	**4**	5.7%
More than 10	**5**	7.1%

19. How many of ILSs have you implemented in an educational setting (formal and informal)?



1	**13**	18.6%
2-3	**30**	42.9%
4-6	**12**	17.1%
7-10	**5**	7.1%
More than 10	**9**	12.9%
Other	**1**	1.4%

In which country do you live?



Albania	**0**	0%
Austria	**0**	0%
Belarus	**0**	0%
Belgium	**0**	0%
Bosnia and Herzegovina	**0**	0%
Bulgaria	**4**	5.7%
Croatia	**2**	2.9%
Cyprus	**1**	1.4%
Czech Republic	**0**	0%

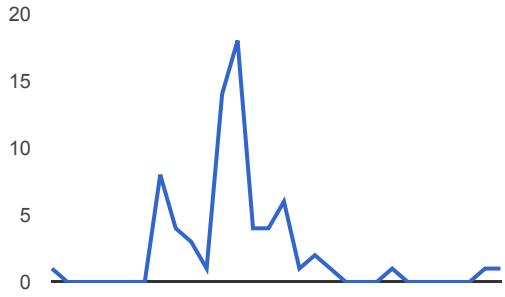
Denmark	**0**	0%
Estonia	**2**	2.9%
Finland	**0**	0%
France	**1**	1.4%
Germany	**2**	2.9%
Greece	**8**	11.4%
Hungary	**2**	2.9%
Iceland	**0**	0%
Ireland	**0**	0%
Italy	**0**	0%
Latvia	**0**	0%
Lithuania	**0**	0%
Luxembourg	**0**	0%
Malta	**0**	0%
Montenegro	**0**	0%
Netherlands	**0**	0%
Norway	**1**	1.4%
Poland	**2**	2.9%
Portugal	**30**	42.9%
Republic of Moldova	**0**	0%
Romania	**3**	4.3%
Russian Federation	**0**	0%
Serbia	**1**	1.4%
Slovakia	**0**	0%
Slovenia	**0**	0%
Spain	**8**	11.4%
Sweden	**0**	0%
Switzerland	**1**	1.4%
The former Yugoslav Republic of Macedonia	**0**	0%
Turkey	**1**	1.4%
Ukraine	**0**	0%
United Kingdom of Great Britain and Northern Ireland	**0**	0%
United States of America	**0**	0%
Other	**1**	1.4%

A big thank you and here you have a space to leave any thoughts you want to share with us.

It was a pleasure participitaing in the Go-Lab project. Both me and my students learned a lot!
Good work!
Many thanks for the interesting experiences!
It was a unique experience, I learned a lot of new things that I apply to class. I would like this project to continue.
I love this project and my students are so motivated with it. I hope I can create more ILS for my students.
I attended 2 trainings very useful for my career caree

Very nice project!
I remember 3 years ago I organized jointly with the expert science of Pleven first workshop with teachers of physics and astronomy - there was very little work online laboratories, but the enthusiasm of the teachers were great - for the first time had the opportunity to learn about these laboratories of collected in one place. Last year again provedhome regional training - things are quite different - teachers easily found the necessary resources and easy to use platform graasp, gained courage to try to create their their Inquiry Spaces. Extremely project development thanks to the work of enthusiasts with high professionalism and responsibility !
Go on this way!
The Platform give potential to creating a precise project-based learning in a virtual world, but with the presumption that the teacher in style research partners in the learning process, i.e students experiment, verify and prove / reject hypotheses, discover and share their results . On the building of skills and competencies of the 21st century - students and teachers have the opportunity to combine cognitive, social responsibility, cross-sectional relation to various problems, not only specialized and complex to big-appropriate ideas for the existence and development of the universe.
Keep up the good work!
Thank you! Go Lab is offering everything that we need for STEM lessons. Online labs are my favorites.
Go-lab was the best project so far I have participated in.
Keep going on this great work. Tks
I am very excited with Go-Lab, which is a very excellent and brilliant project!
Thank you for creating Go-Labs!
I want to thank you the Go Lab team for their support during these years! Additionally it will be very useful form me a tool that cut and take the useful part of a video that I would like to add in my ILS.
In my new job this year in univrersity , i'll have opportunity to disseminate more as a teacher trainer to primary and secondary STEM teachers. Thanks for all the well job done s
I hope that the project continues next year
Congratulations for all your work and dedication. Thank you very much.
ok :)
Great project, great experience to share it with all of you!!
I need time to develope this activities.
Many thanks to you for such an excellent tool Offer us
I am looking forward for next activities.Thank you!

Number of daily responses


20
15
10
5
0