Next-Lab

Next Generation Stakeholders and Next Level Go-Lab Ecosystem for Collaborative Science Education with Online Labs

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Deliverable 1.4

Next-Lab Year 2 dissemination and implementation activities

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Executive summary

The goal of D1.4 is to provide an overview of Next-Lab dissemination & implementation activities (WP1 activities with background information of WP2) that have taken place during the 2nd year of the Next-Lab project. This document follows the reporting aspects introduced in D1.3 (adapted to the currents project reality) and the guidelines presented in D1.1 towards effective outreach and sustainable impact of the Go-Lab ecosystem within the teachers', Teacher Training Institutes' and policy makers' community.

Year 2 has been definitely a success in terms of numbers, but also when it comes to the technical development implemented in Golabz for the support of outreach project activities. The support area of the website was launched in early 2018 and can now be accessed from the main menu of the Golabz page[1]. The new support page provides various and more elaborated types of content, such as multiple demo-videos demonstrating handling of the platforms and particular apps, download materials, such as usage manuals, as well as information about the Go-Lab community. All presented in a centralized way.

Through its social media channels, the Next-Lab project has already almost doubled the outcomes of the Go-Lab project. The Facebook group and Twitter channel (the two main dissemination channels of Next-Lab) gained more members in Year 2, compared to Year 1 (197 and 577 compared to 136 and 533 members respectively). In this regard, and aiming to even further extend the project's outreach, Next-Lab will continue to publish series of posts, such as the "Lab of the week" and "Do you know" (mostly technical updates). An additional effort will also be made to further promote the multiple ongoing project activities: NECs, ambassadors, winter & summer schools, online sessions, competitions etc.

In terms of dissemination and implementation, both Expertise Centres and Ambassadors have intensified the number and target of their activities. Overall, more than 4400 teachers have been reached through presentations, conferences, seminars, and other dissemination activities and over 1480 teachers (200 teachers more compared to the first year of the project) have been trained by the project partners. As for the ambassadors, a total of 92 events have been organized, which compares favourably with 2017 were 74 events carried out by ambassadors. As in 2017, the majority of 2018 events were face-to-face presentations and teacher trainings. Following the project review in June 2018, the project has implemented a 3 pillar approach in relation to overall school involvement in the use of Go-Lab. This new approach includes case studies, further school training and impact analysis relying on social media data and will continue implemented throughout the final year of the project.

Finally, while Teacher Training Institutes have proven to be a difficult target, the Next-Lab TTIs framework has continue to grow throughout the 2nd year of the project and consolidated within those organizations that were already part of the framework in year 1. New activities such as a winter school for TTIs will be developed in 2019 to encourage further implementations. Communication with the Ministries of Education has also been sustained, fostering face-to-face exchange with Ministry representatives and a spring school for curriculum implementer and policy makers has been scheduled for 2019.

[1] http://support.golabz.eu/

Contents

1. Introduction

As described in D1.1, WP1 is meant to build strong relations between Next-Lab and teachers, organizations of teachers and policy makers. This document presents a complete overview of the Next-Lab dissemination & implementation activities and the resulting impact figures during the 2nd year of the project (as of November 30th 2018). The 1st year of the project was reported in D1.3.

This report provides specific data for the communications functions and informs about the user groups for Next-Lab's affordances and facilities, while collecting requirements and ideas from these groups to enable a smooth expansion of the Go-Lab Ecosystem within students, teachers, and organizations. The specific target groups featured in D1.1 were teacher training institutes (Task 1.1), teachers and their organizations (Task 1.2), and policymakers (Task 1.3). The overall impact of Next-Lab through WP1 is also assessed in this document by data analytics on different forms of usage of the Go-Lab Ecosystem and social media, while describing in detail the necessary dissemination materials produced and dissemination & implementation activities carried out.

To facilitate the reading and understanding of this report an additional layer, "strategy", has been added per target group. These sections serve as a reminder of the strategy that has been adopted in order to address the specific audiences. In addition, they provide information on possible adaptations that took place in the course of the project and the rationale behind them.

Finally, as an annex to this report, per country dissemination and implementation summaries of the activities per consortium partner are also included, for those identified as Next-Lab expertise centres (NECs) within the Roadmap for outreach and impact.

2. The Go-Lab Ecosystem

2.1 Introduction

The Go-Lab Ecosystem (Golabz http://www.golabz.eu and Graasp http://graasp.eu) is the main online channel allowing users to be informed about the Go-Lab Initiative as well as tools and services it offers. For the dissemination of the Next-Lab project, especially the News blog is relevant, as it provides updates on the project, dissemination and implementation activities, as well as technical developments. These updates are then shared via the social media channels (see Section 3), linking back to the blog. Furthermore, the Next-Lab project website provides general information about the Go-Lab Initiative and the Next-Lab project. This part of the Go-Lab Ecosystem is more static and is updated several times a year, if a new Go-Lab related project is acquired or Deliverables are approved and can be published. Finally, the Support page provides text and video materials explaining the Go-Lab Ecosystem and giving tips on how to use certain tools. The following sections present the updates of these components in the 2nd year of the project.

2.2 News blog

The project News blog (http://support.golabz.eu/news) can be accessed from the main menu of Golabz. Previously, it was located on the Next-Lab project website, but it was decided to migrate it to Golabz to make it more accessible for teachers[2]. In the 2nd year of the project, sixteen blog posts were published informing teachers about the upcoming and past events, such as Summer Schools and teacher competitions, on implementation in the different countries, as well as technical updates.

The design of the News blog was slightly modified to differentiate between project-related news and updates on the Go-Lab Ecosystem (e.g. new features, new apps, etc.). These two types of news are now highlighted with different colours (light blue for general news and orange for technical news, see Figure 1: News blog); filtering on the right allows searching content by category. It is planned to add one more category to publish previous newsletters and provide them for download (currently, they are available on the Support page, but this is not quite intuitive), which will be done towards the end of the 2nd year of the project. A button for Newsletter registration has already been provided on the right of the page (see Figure 1: News blog).

Strategy adaptation

Aiming to further contribute to the projects outreach, Next-Lab will post at least one article a month until the end of the project with the contribution from all the partners. These will mostly be reports on events and implementation activities by the NECs, but articles will also include technical updates and announcements of events like winter and summer schools, online campaigns etc. The blog will also allow the download of previous Next-Lab newsletters.

[2] The project website (http://nextlab.golabz.eu) targets all stakeholders and provides information relevant mainly for research community and other projects, whereas information for teachers is provided mostly on Golabz and Support page. The News blog targets mainly teachers. For this reason it was decided to move the News blog to Golabz, so teachers can access all information in one place.

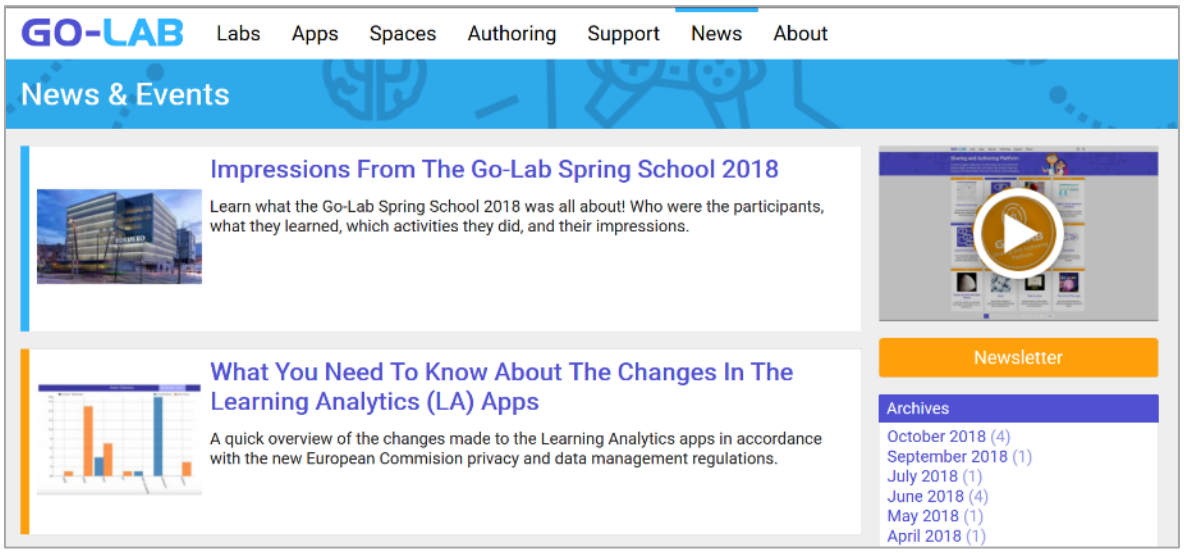


Figure 1: News blog

2.3 Next-Lab website

The Next-Lab project website (http://nextlab.golabz.eu) was launched in the 1st year of the project and there were no significant changes in its setup or design. In terms of content, the following changes have been made:

- The approved Deliverables have been uploaded: http://nextlab.golabz.eu/deliverables
- The list of project-related publications has been updated: http://nextlab.golabz.eu/publications
- The Go-Lab Initiative page has been updated featuring newly approved projects using the Go-Lab Ecosystem: http://nextlab.golabz.eu/initiative
- The box on the right of the pages links to the latest posts in the News blog.

The project website can be accessed using the direct link from the About page in Golabz, using the button on the right: http://support.golabz.eu/about.

2.4 Support page

The support page has been launched in the 2nd year of the project and can be accessed from the main menu of Golabz: http://support.golabz.eu/. Compared to the support page which was available in Golabz 1.0 (prior to migration; see Deliverable D4.2, M12), the new support page has a more elaborated structure and provides various types of content, such as multiple demo-videos demonstrating handling of the platforms and particular apps, download materials, such as usage manuals, as well as information about the Go-Lab community (Call for teachers, Next-Lab Ambassadors and NEC by country, access to online community in Graasp, etc.). Furthermore, all support content previously spread in the different parts of the Go-Lab Ecosystem (such as information on Big Ideas of Science, Pedagogical Scenarios, etc.) is now provided on the Support page in a centralised way. Figure 2: Support page provides a screenshot of the new support page.

At the beginning of the 3rd year of the project, the Support page will be revised, providing new, more interactive types of content, updated user manuals and videos, teacher training

modules, as well as improved usability and navigation. These updates will be reported under WP2.

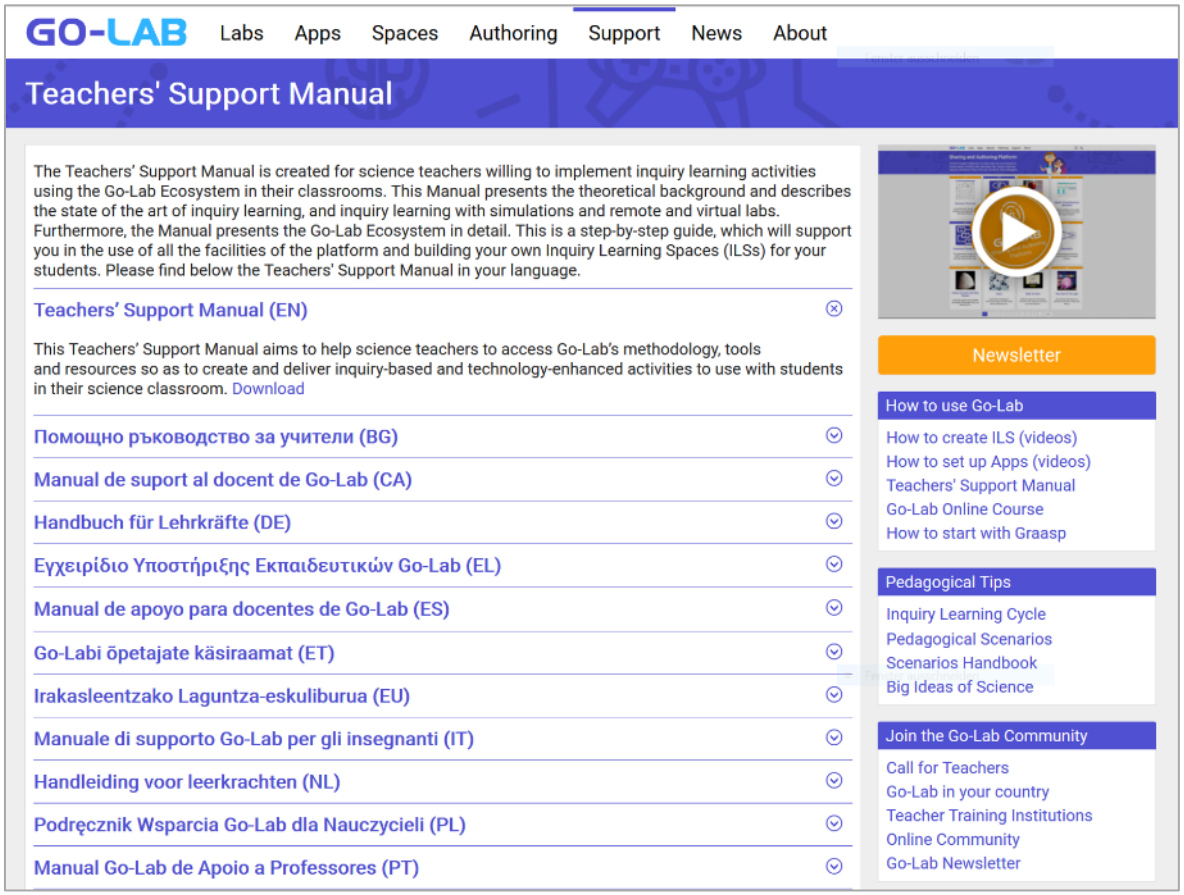


Figure 2: Support page

2.5 Golabz.eu

In the Go-Lab Sharing Platform (https://www.golabz.eu) there have been no specific changes that should be mentioned in this Deliverable. All technical improvements and new features will be reported in the Deliverable D4.6 Releases of the sustainable sharing and tutoring platforms (M36).

However, it should be mentioned that Golabz is now used and further developed by two projects: Next-Lab and GO-GA (Go-Lab goes Africa, which started in January 2018). This has been reflected on the About page (http://support.golabz.eu/about), which provides access to the websites of both projects, as well as in the footer, linking to both projects as well. Figure 3 demonstrates the About page.

In order to assure compliance to GDPR, which came into effect in May 2018, the data privacy policy has been revised (http://nextlab.golabz.eu/data-privacy) and mechanisms have been implemented, which were needed to make all components of the Go-Lab Ecosystem compliant to this regulation. For example, when visiting the website for the first time, the user is asked to consent on the use of cookies, the user may request all data saved about her and ask to correct or delete these data, the data collection is reduced to the necessary minimum and the website does not use social media plugins, so the data is not shared with external platforms. This applies especially to Golabz, where users can

create accounts and log in; the Next-Lab website, Support page and News blog do not collect any user data. Google Analytics is used in an anonymised way, so individual users cannot be identified via location or IP address.

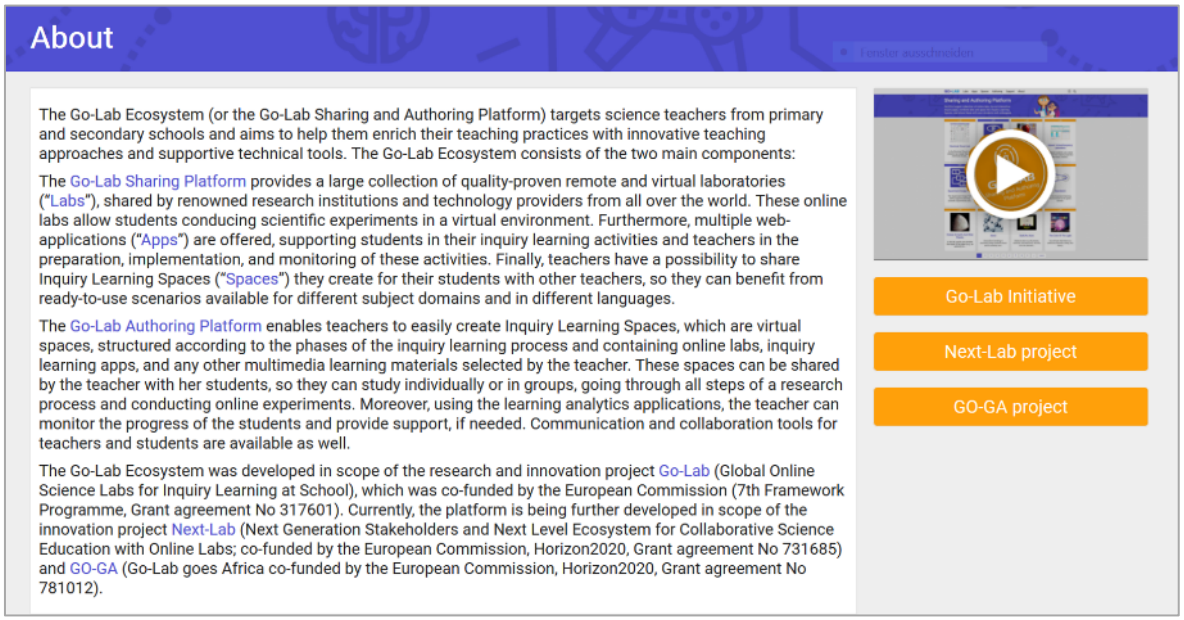


Figure 3: About page

In terms of visits (sessions), Golabz reached its highest point ever in November 2018 (see Figure 4). For the first time since the beginning of the project, we crossed the 18.000 visits line (18.109), which compares favourably with October 2018 [17.965 visits (with one day more in the month)]. When comparing with the previous years, in November 2016 (final year of the Go-Lab project) we registered 13.022 visits and in November 2017, 11.864 visits.

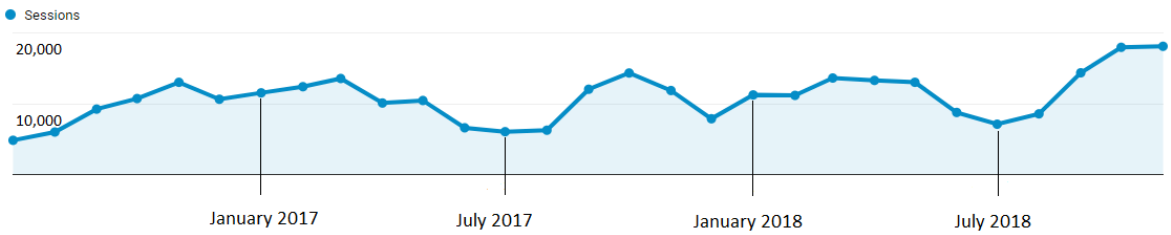


Figure 4: Golabz visits (per month) from July 2016 to November 2018

Even during the usual summer holidays dip, July 2018 (7106 sessions) compared favorably with July 2016 (4833 sessions) and July 2017 (6048 sessions). In this regard, Golabz has offered continue and stable increase throughout the life of the project.

3. Next-Lab social media

3.1 Introduction

As reported in D1.3 (M12), the Next-Lab project adopted the Go-Lab project's social media channels. In order to clearly differentiate between the number of members and followers acquired during each project, January 17th 2017, was assigned as the milestone date to measure Next-Lab's online dissemination activities. Table 1 lists the social media channels used during the Next-Lab project and the number of their members, followers and likes per project year.

Table 1: Number of members/likes per social media channel[3]

Channel	No. of members/ followers at the beginning of Next-Lab	No. of members/ followers joined in Year 1 (as of 04.12.2017)	No. of members/ followers joined in Year 2 (as of 30.10.2018)	Cumulative No. of members/ followers
Facebook page	1,217 (likes)	420 (likes)	368 (likes)	2,005 (likes)
Facebook group	895 (members)	136 (members)	197 (members)	1,228 (members)
Twitter channel	1,158 (followers)	533 (followers)	577 (followers)	2,268 (followers)
Google+ group	147 (members)	29 (members)	29 (members)	205 (members)
LinkedIn group	166 (members)	37 (members)	23 (members)	226 (members)
LinkedIn page	None (new page)	33 (followers)	28 (followers)	61 (followers)
YouTube channel	96 (followers)	36 (followers)	41 (followers)	173 (followers)

Figure 5 visualises the dynamics of the social media audience development. As one can see, the Facebook group and Twitter channel (the two main dissemination channels of Next-Lab) gained more members in Year 2, compared to Year 1 (197 and 577 compared to 136 and 533 members respectively). Whereas the community growth rate on Facebook during Next-Lab is comparable to the growth rate during Go-Lab (Next-Lab: around 200 members in Year 2, Go-Lab: 225 members per year in average), the growth rate on Twitter has almost doubled (Next-Lab: 577 followers in Year 2; Go-Lab: 290 followers per year in average). The yearly number of likes on the Facebook page has increased compared to Go-Lab (Next-Lab: 368 likes in Year 2; Go-Lab: 304 likes per year on average). The other channels (Google+, LinkedIn, YouTube) show a constant growth rate of about 30-40 new members/followers per year.

[3] SlideShare and Flickr are not presented in this table; they are kept online, but not maintained (see D1.3, M12).

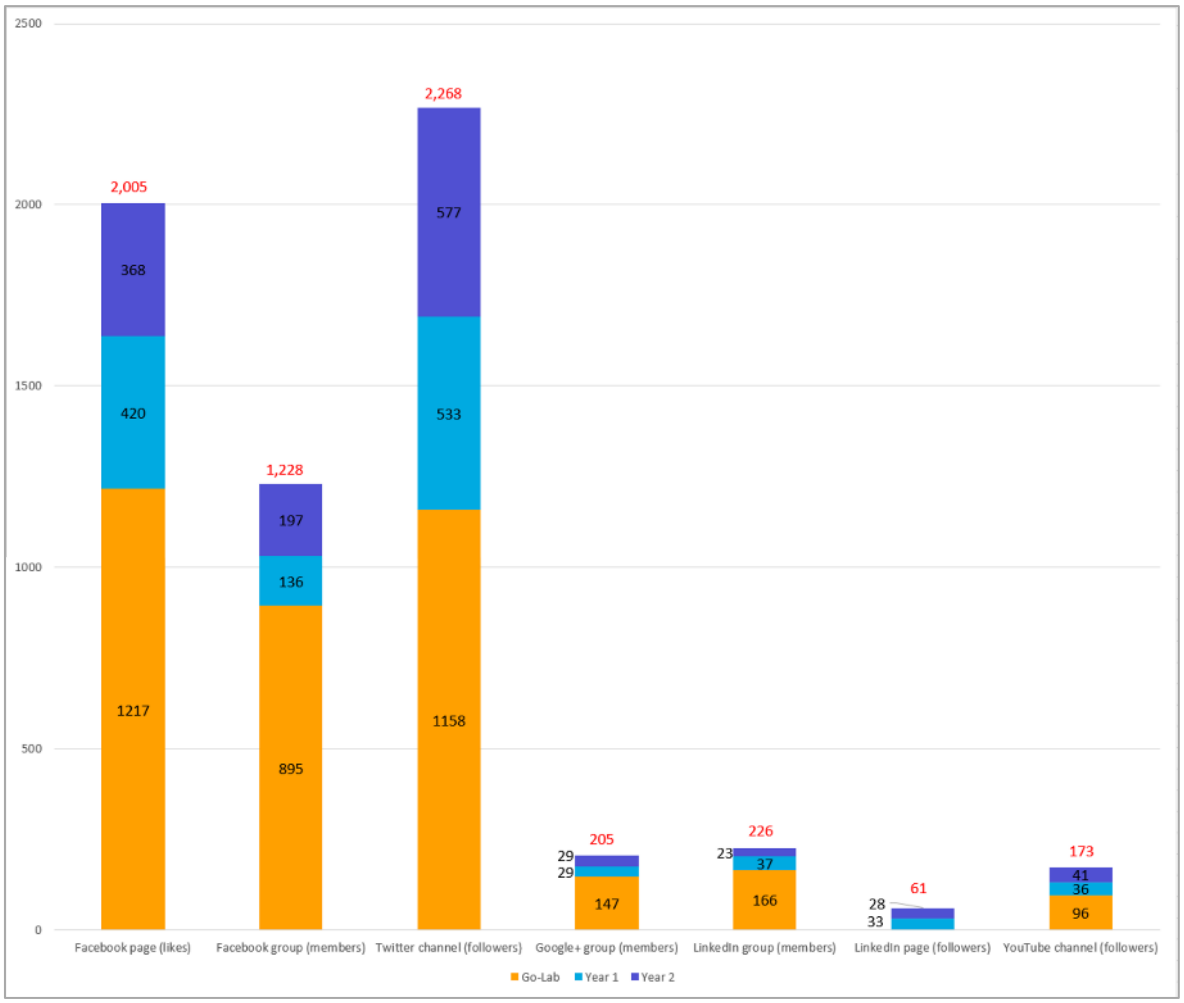


Figure 5: Social media audience (Go-Lab, Next-Lab Year 1 & Year 2)

Strategy

Aiming to further contribute to the project's outreach, Next-Lab will continue to publish series of posts, such as the "Lab of the week" and "Did you know" (mostly technical updates). An additional effort will be made to promote ongoing project activities: NECs, ambassadors, winter & summer schools, online sessions, competitions etc. Moreover and in order to inspire and support teachers in their in-class implementations, a series of videos featuring Go-Lab Ambassadors sharing their experiences and their impact on students will be launched at the beginning of the 3rd year of the project.

3.2 Facebook

Facebook is one of the most popular channels used for Next-Lab's online dissemination activities. The Go-Lab Initiative page[4] is administered by the project partners (IMC and EUN), and used as an official channel to share announcements and information about the project's Sharing and Authoring Platform, news, events and activities such as teacher trainings, summer schools and exhibitions. The Go-Lab Community[5] is a public group designed to share similar information as those on the Go-Lab Initiative page, with open-

[4] https://www.facebook.com/GoLabProject/

[5] https://www.facebook.com/groups/golab.project/

group features making it possible for the group members to collaborate and share other STEM related news, events, activities, resources, and inquiries.

Regular content, such as the “Lab of the Week” (see Figure 6) and “Did you Know” (see Figure 7) posts, are each posted once a week on both accounts. Other posts like participation in events, activities in different countries, Go-Lab Schools as well as project and news blog announcements are shared depending on their occurrences, with an average of 1 post per week. Consequently, 3 posts are shared on a weekly basis on each of the Facebook accounts. Furthermore, the Go-Lab Community group has around 700 active members publishing additional content.

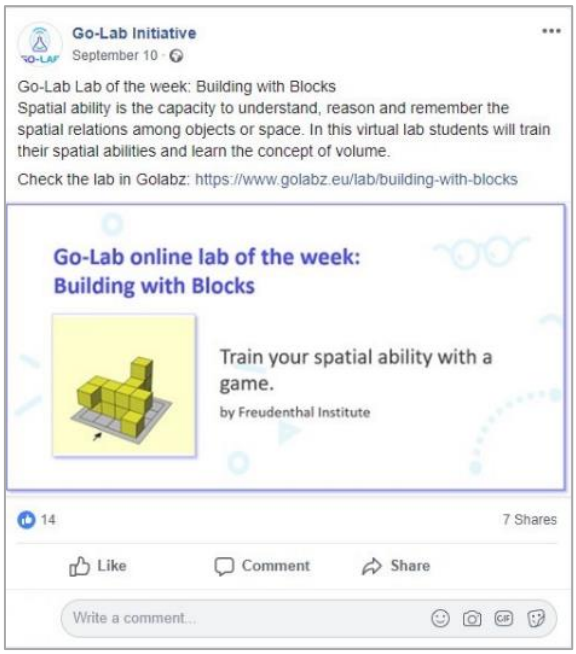


Figure 6 “Lab of the Week”

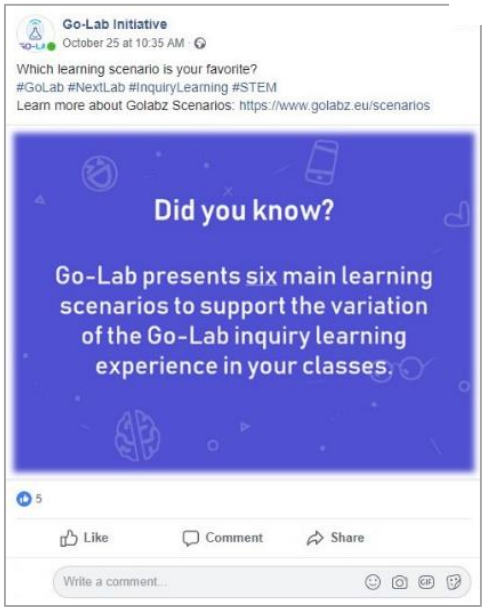


Figure 7: "Did you know"

3.3 Twitter

The Go-Lab Initiative Twitter[6] account had a significant increase in the number of followers and activities since the beginning of the Next-Lab project. It is used to disseminate the project's live events, announcements, updates and news through tweets, and regular posting of the "Lab of the Week" and "Did you Know" content. Furthermore, tweets and mentions from the ambassadors (see Figure 8) and project partners during teacher training events, Go-Lab Schools as well as related activities by our affiliated partners keep the page up-to-date with the latest project events and information.

Figure 8 Ambassadors' Tweet about Next-Lab Training in Turkey

3.4 Social media campaigns

World Space Week (http://www.worldspaceweek.org/) is an annual campaign aiming at celebrating at international level the contribution of space science and technology to the advancement of humanity.

In order to widely promote Next-Lab and capitalising on the existing buzz on social media during the World Space Week (4-10 October), EUN with the support of Nuclio and Ellinogermaniki Agogi, organised a dissemination campaign on this theme. Selected ILSs and labs focused on space topics have been published on the project's social media channels every day of this week. The relevant hashtags (#NextLab, #GoLab, #WSW2018, #STEM) along with attractive visual material have been used, aiming to draw extra attention to the Go-Lab repository and Next-Lab project. A total of 17 posters have been produced, highlighting a lab, a data set, or an ILS (one per poster as seen in Figure 9). The posters were published online every day (2-3 posters per day) in both Facebook and Twitter accounts of the project.

[6] https://twitter.com/GoLabProject

The following categories were assigned to the days of the campaign:

- 4 October – Earth- and space-based instrumentation (telescopes, spacecraft)
- 5 October - Solar system
- 6 October – Our fragile planet (climate)
- 7 October – Famous figures in space research or Space discoveries
- 8 October – Living on another planets (exoplanets and Mars)
- 9 October – Space exploration (missions, Hubble)
- 10 October – Space careers

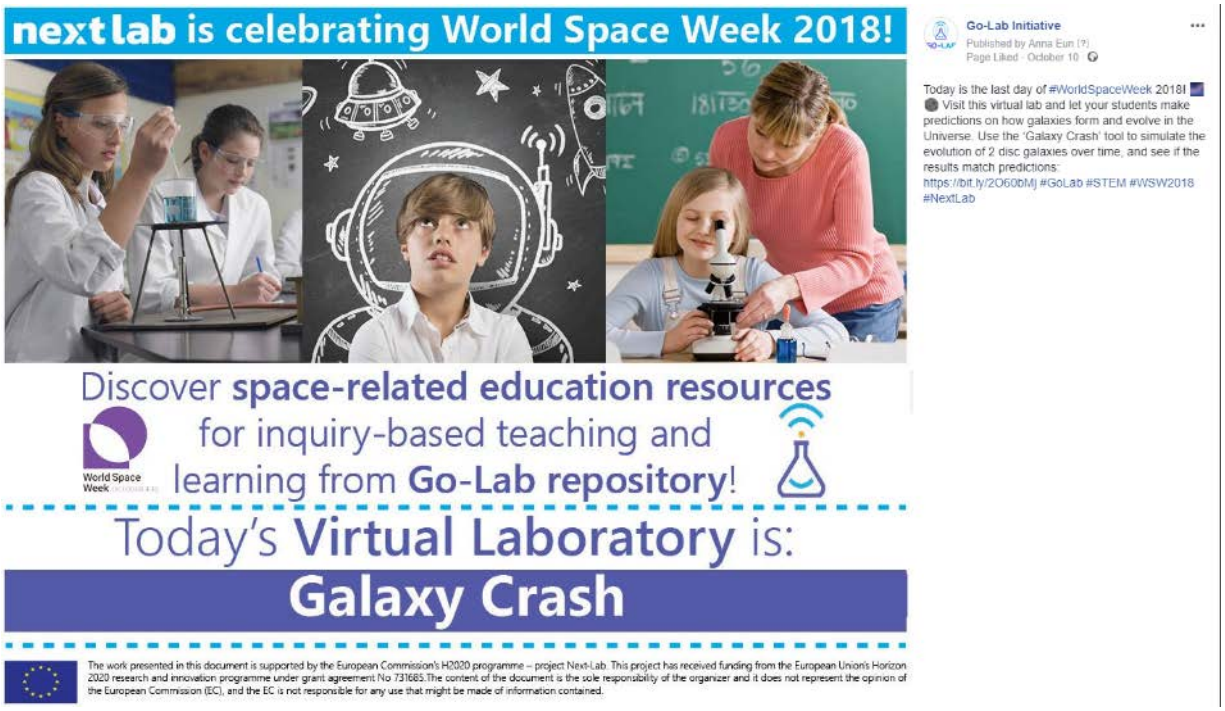


Figure 9 Example of a poster promoting Go-Lab resources related to space and astronomy during the World Space week 2018 campaign.

Teachers Training Institutes dedicated campaign has two aims:

- to recognise and give visibility to the TTIs who are already contributing actively to the Next-Lab project, developing training programmes for pre-service teachers, based on the Go-Lab Ecosystem;
- to recruit new TTIs by showcasing good examples and practices of inquiry-based teaching that are already integrated in the programmes of universities across Europe and facilitating interest from institutions training teachers-to-be to use Next-Lab material in their teaching.

The introduction of the Go-Lab audiences to the concept of training future teachers, has been initiated during the 2nd year of the project by publishing a blog article explaining how the adoption of Inquiry-Based Learning in digital environments (such as Go-Lab) fosters innovative approaches to initial teacher training. The blog article can be found under http://support.golabz.eu/news/bringing-ict-and-ibse-to-initial-teacher-education.

In order to introduce each TTI that supports Next-Lab to the Go-Lab community, a dedicated online dissemination campaign will be running in the first half of 2019. The campaign entails the creation of visually attractive posters for each TTI. These posters will be displaying the logo of the organisation and a short quote about actions taken by the specific organisation

in introducing the Go-Lab Ecosystem. The campaign will also offer the opportunity to other TTIs interested to implement Go-Lab in their curricula to get in touch with the project representatives and learn more about the project's contribution to the initial teachers' training.

3.5 Other

The Google+ group is mainly used to share the "Lab of the Week" and "Did You Know" regular posts, as well project news and announcements. Google announced that it will shut down the consumer version of Google+ in less than a year. Hence, the posts will be archived but the group will be closed once the service is no longer available.

The LinkedIn group consists mostly of researchers, educational managers, school principals and teachers. The main project news and events, such as Go-Lab related events, announcements and platform updates are published in the group. LinkedIn groups' policy and features make it challenging to have a significant increase in the number of members. The main challenges are the difficulties in finding the group plus the need for membership to be requested and approved.

The Go-Lab Initiative LinkedIn page[7] was created at the beginning of the Next-Lab project, with the aim to improve reachability on LinkedIn. Almost half of the page visitors work in program and project management, whereas visitors working in education and research come in second and third place, respectively. Project announcements, news blogs and major project events are published on the page.

The YouTube channel includes the project's promotional and instructional videos. A new set of videos produced with UHD/4K or Full HD (1920x1080) video quality, a new design for the introduction and animations, as well as an improved and updated audio and music quality are now available on the channel. These videos follow scientific-based guidelines, such as the ones set out by van der Meij (2013)[8] to create effective instructional videos. So far, 20 new videos have been uploaded, demonstrating how to set-up and configure the newly designed and re-designed Apps. Additionally, 10 new demo-videos illustrating how to work with Inquiry Learning Spaces have been published to reflect the updated interface of the Go-Lab Sharing and Authoring platforms.

[7] https://www.linkedin.com/company/18144102/

[8] van der Meij, H., & van der Meij, J. (2013). Eight guidelines for the design of instructional videos for software training. Technical communication, 60, 205-228.

4. Next-Lab expertise centres (NECs)

4.1 Introduction

The Next-Lab Expertise Centres have continued their teacher training activities and dissemination of the programme all over Europe and beyond throughout the 2nd year of the project. The organization of the trainings and other dissemination activities is a result of the efforts by both the expertise centres and the Next-Lab Ambassadors. This section focuses on the outreach by the NECs and section 5 will provide further details on the results by the ambassadors.

Strategy

While the organization of the trainings falls under WP2 and its reflection has been included in deliverables 2.4 and 2.8. Coordination has been established with the goal of having a fluid communication and alignment of aims and priorities between WP1 and WP2. Meetings are held biweekly and activities are discussed directly with the Next-Lab expertise centres involved. This close coordination guarantees effective dissemination and organization of events and trainings multiplying the effects of each partner's activities (for more details on the outreach strategy please see D1.1).

4.2 European outreach

The section below provides a summary of the 2nd year of the project (from December 2017 to November 2018) dissemination and implementation activities by the project partners. Full details of the NECs activities per country for dissemination, trainings and social media may be found in Annex 1.

4.2.1 Dissemination events

Table 11 (Annex 1) presents the list of online and face-to-face European activities organized during the 2nd year of the Next-lab project. A total of **196 dissemination activities** have been organized this year. While more than 20,000 activities have been organised according to the numbers reported by the partners, this year we have decided to include the final numbers only for the tangible outreach (excluding articles, blog posts, social media, etc.)[9]. Overall, more than **4400 teachers** have been reached through presentations, conferences, seminars, and other dissemination activities. This year's approach allows us to differentiate between the different types of face-to-face dissemination activities and hence to have a better picture of the total outreach per country.

The information collected for the dissemination activities and reflected in this document is the following:

- Country/city reach
- Dates
- Type of audience
- Number of attendees
- Title/Course description.

Other details, such as the Go-Lab domains covered, the events' programmes, partners involved, URLs, materials and photos have been made available online for internal purposes.

[9] Full details on the outreach through Next-lab social media may be found in section 3.

Highlights

The list below presents some examples of major dissemination events per country:

- Spain: *"Inquiry learning space en tu clase y laboratorios remotos: proyectos Go-Lab y Next-Lab"*
  - Presentation to Educational authorities >>> 100 participants.
- Finland: *"Interaktiivinen Tekniikka Koulutuksessa (ICT in Schools)"*
  - Poster session >>> 200 participants.
  - https://kohtio-konferenssi.fi/
- Germany: *"MINT-EC Network headmaster meeting"*
  - Poster session for secondary school teachers >>> 350 participants
  - https://www.mint-ec.de/
- Portugal: *"Noite Europeia dos Investigadores"*
  - Presentation for academics and researchers.
  - https://noitedosinvestigadores.org/
- Greece: *"The Society for Stem Education in Europe"*
  - Presentation for secondary school teachers >>> over 30 participants
  - http://srv-1sek-irakl.ira.sch.gr/1ekirakwp/?p=1515
- Netherlands: *"Twente Meesterschap"*
  - Presentation for secondary school teachers >>> 200 participants
  - https://www.utwente.nl/nl/lerarenconferentie/programma/
- United Kingdom: *"Midlands Consortium meeting"*
  - Presentation organized by the Leicester TTI partner Jon Heywood as part of the Midlands Consortium meeting.
- Estonia: *"eVent 2018 – the Digital Innovation Day"*
  - Presentation for secondary school teachers >>> 50 participants
  - http://htk.tlu.ee/event/
- Belgium: *"Visit from Erasmushogeschool Brussels to Future Classroom Lab"*
  - Presentation for teacher trainers >>> 30 participants
  - http://htk.tlu.ee/event/
- Cyprus: *"Investigating asteroid fall on earth using a virtual lab"*
  - Presentation of an ILS in a public primary school >>> 60 students + teachers
  - http://htk.tlu.ee/event/

This sample offers and idea of the variety of audiences and targets reached throughout the 2nd year of the project, not only within target groups (researchers, teachers, trainers), but also in relation to educational level outreach (primary and secondary schools).

Dissemination activities are described in further detail within the per country reports included in Annex 2 of this document.

4.2.2 Implementation activities

The Next-Lab project has continued (or even extended) its strategy of face-to-face European trainings organized during the 2nd year of the Next-lab project. Overall, more than 1480 teachers have been trained by the project partners, this is over 200 teachers more, compared to the first year of the project (more information in D1.1).

The targets indicated in both the Description of Works and D1.1 have already been largely exceeded and following the school approach designed for the last year of the project (see section 4.4), the forecast shows that these numbers will continue to increase during the final year of the Next-Lab project.

Implementation activities are described in further detail within the per country reports included in the Annex 1 of this document. For more information about the training activities reflection please see D2.8.

4.3 International outreach

Next-Lab's NECs have also been very active in the promotion of the project beyond the natural EU-national outreach of the consortium. Table 1 shows the implementation and dissemination activities conducted within the Next-Lab framework.

Table 2: NECs international outreach

Country	Date	Event type	Audience Type	Audience size	Event type
Benin	14-09-2018	Training (WP2)	Secondary School Teachers	25	Teachers Training
Benin	13-09-2018	Training (WP2)	Secondary School Teachers	25	Teachers Training
Benin	12-09-2018	Training (WP2)	Secondary School Teachers	20	Training Teachers' Trainers
Ecuador	16/05/2018	Training (WP2)	Secondary School Teachers	8	Next-Lab
Ecuador	15/05/2018	Dissemination (WP1)	Educational authorities	2	Next-Lab
India	14-02-2018	Dissemination (WP1)	Other	25	Presentation for master students
Japan	24/03/2018	Dissemination (WP1)	Other	20	"Astronomy for education" @ Communicating Astronomy with the Public 2018
Japan	10/03/2018	Training (WP2)	Secondary School Teachers	16	Go-Lab – Structuring inquiry activities with online labs
Taiwan	23/05/2018	Training (WP2)	Other		Inquiry learning and 21st century skills (communication) in the context of Go-Lab
Taiwan	21/05/2018	Dissemination (WP1)	Other		

Country	Date	Event type	Audience Type	Audience size	Event type
Taiwan	18-10-2018	Training (WP2)	Secondary School Teachers	25	Teacher training Taipei
Ukraine	11 June 2018	Dissemination (WP1)	Teacher Trainers	25	
Ukraine	11-14 Sept 2018	Training (WP2)	Secondary School Teachers	10	Academic staff of teacher training institution (Borys Grinchenko Kyiv University) together with secondary school teachers
Ukraine	19-21 Sept 2018	Training (WP2)	Secondary School Teachers	32	Academic staff of teacher training institution (Precarpathian National University) together with secondary school teachers
Ukraine	12,13,15 Nov 2018	Training (WP2)	Teacher Trainers	20	

Overall, 15 international activities have been organized with an outreach of 253 participants, including: policy makers, teacher trainers, secondary teachers and other educational authorities.

4.4 Impact & Next-Lab schools

As part of the Next-Lab's impact and outreach strategy and following the project review in June 2018 and the reviewers' comments, the project has implemented a 3 pillar approach in relation to overall school involvement in the use of Go-Lab.

1. Identification of good practices and/or case studies that support the **sustainability efforts** of the project.
2. The development of further school training capacities under the Erasmus + KA1 funding framework.
3. Impact analysis relying on social data collected on the sharing platform (Task 4.1) and analytics from the authoring platform (Task 2.1) connected to the school case study approach.

While pillars 1 and 2 are being conducted under WP2 and hence reported within deliverable D2.8, pillar 3 efforts are undertaken within Task 1.4 (Assessing the impact) in WP1.

Data collected in Tasks 4.1 and 2.1 include numbers of: published spaces, registered users, created learning spaces, number of students using a learning space, number of co-created spaces, visits to the platforms and requests to the services, lab runs etc. These metrics are gathered online and combined into impact indicators which are distributed to the Next-Lab expertise centres on a monthly basis. During year 3 of the project, the impact will be also analysed through a number of qualitative interviews (face-to-face or online) with the aim of

identifying factors that may increase Next-Lab's impact and connecting these results to the overall school case studies findings.

Currently, the WP1-WP2 coordination group[10] is working on the teacher selection criteria and the interview template to be discussed and approved by all partners involved in the task. The interviews will be conducted by NECs (and possibly ambassadors). Selection criteria will be decided on the basis of the feedback information, the quantitative usage data obtained and in connection to the school case studies.

Planning and pre-conditions:

- Each NEC will conduct at least one face-to-face or online interview.
- Teachers will be connected (where possible) to the Next-Lab Schools.
- Teachers will be experienced users and implementers.
- Questionnaire template to include a limited number of open qualitative questions targeting the impact of Go-Lab at both the teacher and school level.

The final template and the full analysis of the results of these interviews will be included in deliverable D1.6 (Next-Lab Overall impact on teacher organisations and connection to policy makers) and used to support the final year sustainability efforts of the project.

[10] WP1-WP2 coordination is composed of EUN (WP1 Leader), EPFL (WP2 leader), EA and NUCLIO. These group reports directly to the PMC and meets on a biweekly basis in preparation for WP1-WP2 discussions.

5. Go-Lab ambassadors

5.1 Introduction

In order to support the implementation of the Go-Lab Ecosystem and Next-Lab project's outreach on country level, **19 Go-Lab Ambassadors** are appointed as national contact points in their respective countries, representing different educational systems and communities. Table 3 shows the complete list of countries and national representatives involved in the ambassadors' network.

Table 3: List of ambassadors

Country	Ambassador
Belgium (Flanders)	Fatiha Baki
Bulgaria	Svetla Mavrodieva
Croatia	Ivana Gugić
Czech Republic	Helena Lazarová
Former Yugoslav Republic of Macedonia	Silvana Ristevska
Germany	Jörg Haas
Hungary	Filep Doina Otilia
Israel	Stella Magid-Podolsky
Italy	Stefano Macchia
Latvia	Ilze Šmate
Lithuania	Rigonda Skorulskiene
Malta	Geraldine Fsadni
Poland	Malgorzata Maslowska
Romania	Lidia Ristea
Serbia	Nada Stojičević
Slovakia	Gabriela Krížovská
Sweden	Preeti Gahlawat
Switzerland	Philippe Kobel
Turkey	Erkan Akar

In order to communicate with ambassadors and update them on recent project developments and training opportunities, a dedicated mailing list is regularly used.

The coordination of Go-Lab ambassadors is a continuous process that includes regular communication with teachers, the facilitation of the qualitative and quantitative aspects of European-wide dissemination (please see section 5.3 for the description of the process of coordination and reporting of the Go-Lab ambassadors). Additionally, a closed Facebook group for the Go-Lab ambassadors is actively used for sharing internal communication, reminders, best practices in teaching & learning and the organization of workshops.

5.2 Activities

The main tasks of the Go-Lab Ambassadors for 2018 (Year 2) are the following:

1. Disseminate Next-Lab at national level (presentations, networking meetings or sharing of Next-Lab material).
2. Present Next-Lab at, at least, one teachers' event / conference at national level with a minimum of 20 people in the audience.
3. Carry out at least two teacher trainings (at least 1 face-to-face and at least 1 online teacher training).
4. Offer operational support in terms of pedagogical quality control (e.g., analyze resources available on the portal) and provide feedback on the project's new tools and services
5. Attend the Next-Lab Ambassadors trainings in Brussels (2 in total) to gain all necessary skills in order to successfully support teachers and disseminate Next-Lab in their countries.
6. Report on activities carried out for the project.
7. Provide pedagogical and practical support the Go-Lab teachers.

   As an optional task, ambassadors are encouraged to provide translations of the new or updated Graasp tool components (apps, labs, and ILSs) in their languages, making educational material available to teachers in their countries.

In 2019 (Year 3), in addition to the tasks from Year 2, additional effort will be put on working with and supporting the ambassadors with two additional tasks:

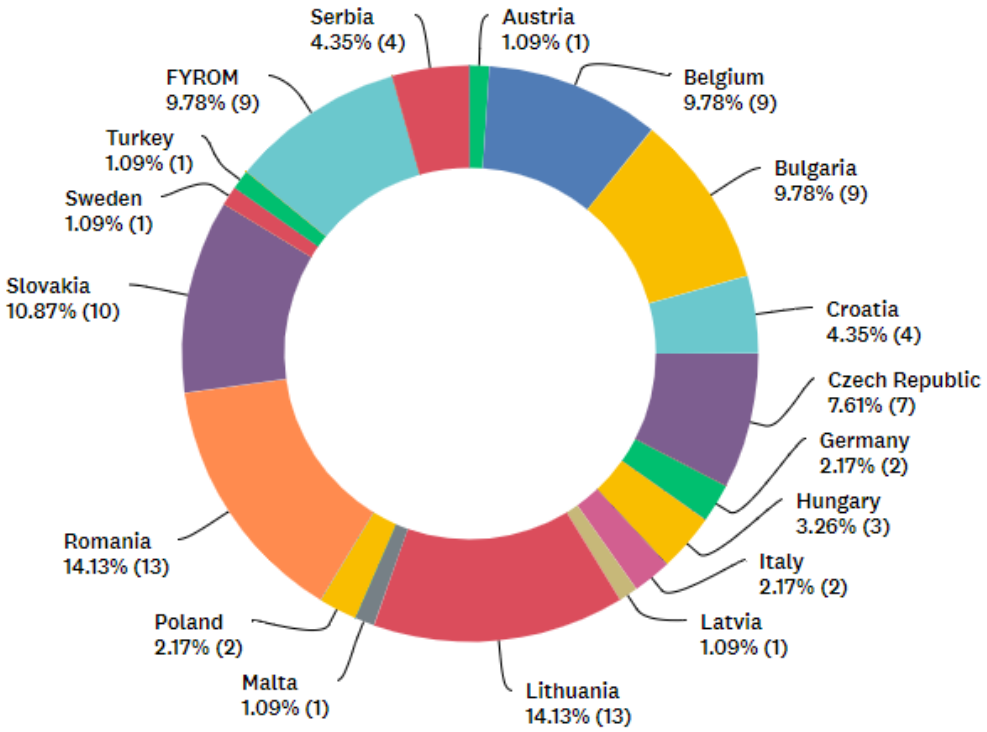
- the collection of case studies from each ambassador and at least one Go-Lab implementer based on a provided set of questions;
- the collection of information in relation to headmasters' role in the integration of Go-Lab at school level.

The main task for all ambassadors is the dissemination of the projects' resources and activities on a local, national and international level. Below you can find a summary of ambassadors' activities in terms of workshops and the organization of trainings as well as the promotion in social media during the 2nd year of the project. The numbers presented in this document have been based on the ambassadors' end of year dissemination reporting that were analysed on December 5th 2018, however, in accordance with the contract the ambassadors have time till 20 December 2018 to report all activities so certain deviations might occur.

In 2018, a total of 92 events were organized by the Go-Lab Ambassadors. For comparison, in 2017 there were 74 events carried out by ambassadors. As in 2017, the majority of 2018 events were face-to-face presentations and teacher trainings. On top of the usual activities

organised in 2018, the ambassadors delivered other types of activities that count for 20% of all activities organised in the course of 2018 (Figure 10b). In particular, ambassadors organised webinars, workshops, face-to-face round tables and discussions, created an online training course integrated in Graasp, carried out online and face-to-face meetings and participated in live TV shows to spread the word about the Go-Lab Ecosystem and reach out to more stakeholders. When it comes to numbers, the strategy of variety of dissemination activities proves to be successful, as the number of participants informed about the Go-Lab Ecosystem and trained to use it in classrooms increased from somewhat 3600 people in 2017 to almost 4000 people in 2018.

(a)



(b)

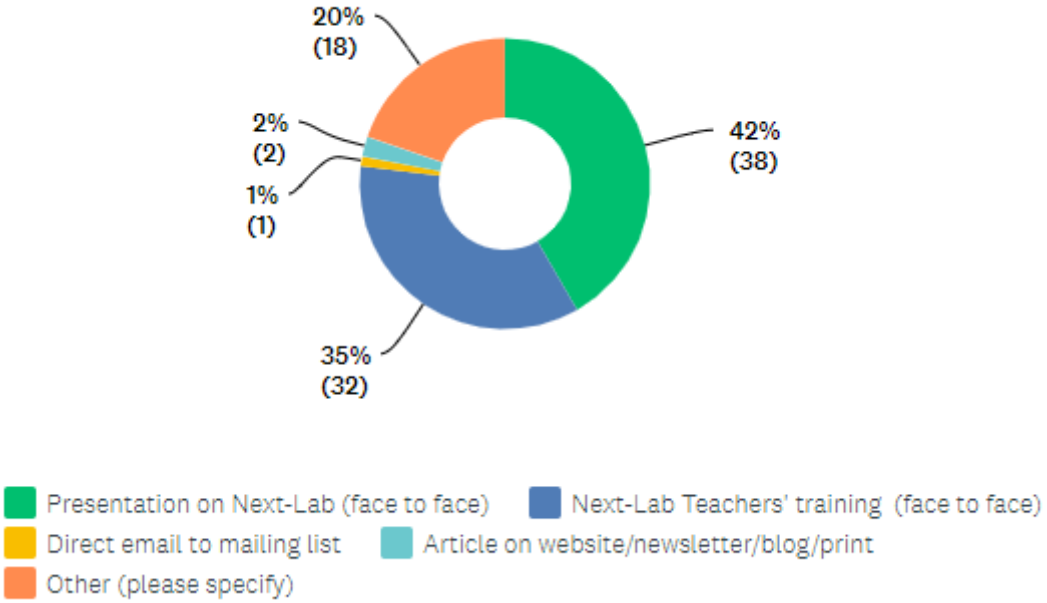


Figure 10: (a) The distribution of events reported in 2018 per country where an activity took place. (b) The distribution of types of events.

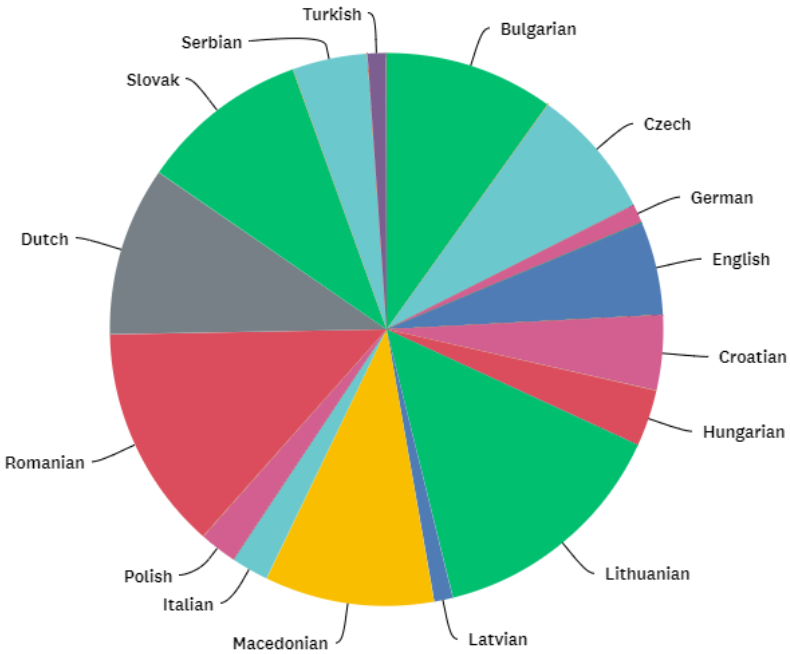


Figure 11: The distribution of languages in which the 2018 events were delivered by the ambassadors.

When it comes to language coverage (Figure 11), the events were organised mostly in languages spoken in ambassadors' countries (see Table 3), which is an expected outcome for national dissemination efforts. Additionally, there was about 5% of events delivered in English. As English is widely used in schools in Malta, which is one of the ambassadors' countries, one of the activities was delivered in English. Another explanation of the English language use for ambassadors' dissemination is that after receiving international training in Brussels, the ambassadors became more confident with presenting Go-Lab in English. The advantage of using English is that the ambassadors had the opportunity to reach teachers not only in their countries, but through international events, for example a presentation at an international conference.

As for the online social media dissemination, approximately 140 social media posts were published mainly in Facebook and Twitter, but also on Instagram and YouTube. Ambassadors actively use their personal and professional accounts to inform their audience about upcoming national events and disseminate new features of Go-Lab. They also regularly post in groups of relevant projects to inform audience of these groups about Go-Lab activities. Ambassadors' confidence in the use of social media has increased after they received training with recommendations on how to communicate properly via social media and an update on GDPR. This training was part of their bi-annual ambassadors' meetings that are organised by European Schoolnet.

A total of 13 (out of 20) ambassadors have joined the 22nd Science Projects Workshop on 15-17 June 2018, while the second face-to-face ambassadors' training of this year – 25th Science Projects Workshop on 30 November – 1 December 2018 was attended by 19 ambassadors. Both international workshops were organised by European Schoolnet in the Future Classroom Lab, in Brussels, Belgium. Led by European Schoolnet, the ambassadors' training events were attended by NUCLIO and EPFL representatives who

delivered training sessions and were involved in the discussion on what can be improved in the Go-Lab Ecosystem from teachers' perspective.

In order to better coordinate the ambassadors and provide them with support on dissemination activities happening in 19 countries, a set of short midterm 1:1 meetings were organised during the SPW22 (June 2018) and included reflection time and sessions on reporting in the programme of SPW25 (December 2018) training. During both training events, special sessions on *"Share your experience and successful stories on Go-Lab Ecosystem dissemination and implementation"* were organised for ambassadors to share with their colleagues and to discuss activities they organised. All these efforts led to an increase in the number and quality of events organised in 2018 in comparison to 2017.

5.3 Go-Lab Ambassadors reporting and monitoring

The nineteen Go-Lab ambassadors are receiving continuous support from their dedicated coordinator at EUN. For the past year, the ambassadors have gradually evolved from stand-alone teachers to an active community that works closely together on promoting and disseminating Next-Lab in their respective countries.

Administration aspects

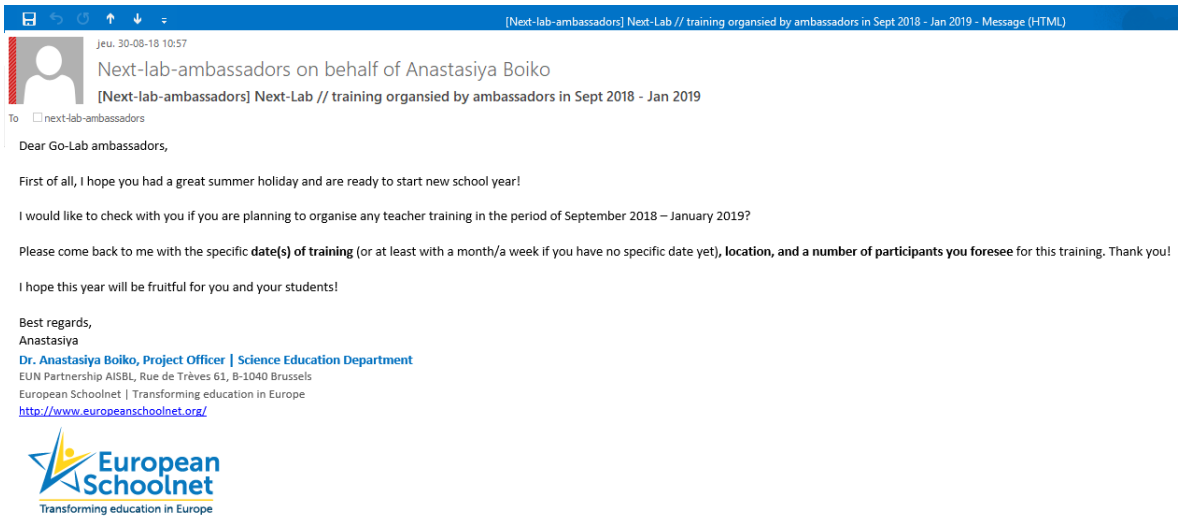
The official collaboration with ambassadors starts from the moment of signing their contract in the beginning of the year and finishes with the evaluation of their dissemination activities and the provision of feedback on their reporting, at the end of year. After the reporting is completed, ambassadors receive their payment. The final payment is based on a list of national dissemination activities approved by the coordinator. In order for a dissemination event to be approved, there should be a proof of its organisation, and the event should be reported by following a common template.

Monitoring, support and feedback

The ambassadors are constantly monitored by the coordinator via emails, 1:1 calls, and short 1:1 face-to-face sessions during the trainings in Brussels, so that both parties are up to date with the dissemination aspects of the project.

The ambassadors receive prompt replies to their questions and can request support for their dissemination activities (both online and face-to-face). For example, ambassadors can receive feedback on the programme of an event they are planning, they can request the presence of an EUN representative in a webinar (short presentation and/or communication with participants in chat and provision of technical support), ask for support (both logistical and pedagogical) for the organisation of a training with more than 20 attendees, and get in touch with their national Ministry of Education.

Through email exchange and various requests from ambassadors, EUN stays informed about the upcoming events in each country. Additionally, the coordinator sends a request for a status update once per 2-3 months in order to track the upcoming training events and plan support, when needed. The example of such email can be found in Figure 12 below.


[Next-lab-ambassadors] Next-Lab // training organsied by ambassadors in Sept 2018 - Jan 2019 - Message (HTML)

jeu. 30-08-18 10:57

Next-lab-ambassadors on behalf of Anastasiya Boiko

[Next-lab-ambassadors] Next-Lab // training organsied by ambassadors in Sept 2018 - Jan 2019

To next-lab-ambassadors

Dear Go-Lab ambassadors,

First of all, I hope you had a great summer holiday and are ready to start new school year!

I would like to check with you if you are planning to organise any teacher training in the period of September 2018 – January 2019?

Please come back to me with the specific **date(s) of training** (or at least with a month/a week if you have no specific date yet)**, location, and a number of participants you foresee** for this training. Thank you!

I hope this year will be fruitful for you and your students!

Best regards,
Anastasiya

Dr. Anastasiya Boiko, Project Officer | Science Education Department
EUN Partnership AISBL, Rue de Trèves 61, B-1040 Brussels
European Schoolnet | Transforming education in Europe
http://www.europeanschoolnet.org/

European Schoolnet
Transforming education in Europe

Figure 12: Example email sent by the EUN ambassadors' coordinator for monitoring Go-Lab ambassadors' national activities

The coordinator monitors the quality of the delivered material during the national training and the status of attendance. Based on these two aspects he provides recommendations on what can be improved next time or what can be done as follow up after the event is completed.

Training

In order to train ambassadors on qualitative aspects of organisation and delivering national dissemination activities, ambassadors' training are organised twice per year in European Schoolnet's Future Classroom Lab (FCL)[11].

The ambassadors receive high quality training on Inquiry Based Learning (IBL) and the use of Go-Lab tools, project communication and 21st century skills by the Next-Lab consortium partners.

Professional development (online training as well as places in Summer/Autumn/Winter/Spring schools) are offered to ambassadors in order to ensure that they have all necessary knowledge to perform their tasks in an efficient way and be the main contact point providing technical and pedagogical support to teachers on national level.

Reporting procedures

In accordance with the contract, the reporting process is transparent and simple to follow. The reporting process has been explained in detail to the ambassadors during the training in Brussels, before they signed the contracts, and reminders on reporting procedures are sent out regularly, especially before the end of the reporting year.

In Year 2, ambassadors reported their dissemination activities by using the following procedure. To ensure the correct information presented in the reporting, **EUN established a three-component reporting** – the ambassadors have to fill in the timesheets, provide support material in Graasp proving that a training took place in Graasp, and fill in the end-

[11] http://fcl.eun.org/

of year reporting form including all dissemination activities they organised in the course of the reporting year.

In order to complete the reporting, the ambassadors have to follow the steps indicated below:

- They claim the **time spent** on the Next-Lab dissemination activities by filling in the timesheet form via this link https://www.surveymonkey.com/r/next-lab_timesheets
- Provide a **report about a training** via the following link https://www.surveymonkey.com/r/next-lab_dissemination2018
- Upload training and/or dissemination **material** (could be pictures, PowerPoint presentations, Word documents used for a training) in Graasp, in the Events space dedicated to their country
- In case they carried out **social media dissemination**, they are asked to fill in this form https://www.surveymonkey.com/r/next-lab_socialmedia.
- Ambassadors need to ensure that they have permission from all persons appearing in pictures and the material shared. Registration forms created for events follow the General Data Protection Regulation (**GDPR**).

In the contracts that Go-Lab ambassadors sign on an annual basis, it is indicated that they will be paid on the basis of the filled in timesheet form and after completing their reporting.

The **tasks** that the ambassadors can report time spent on in the timesheet form are:

1. Preparation of a teacher training on the Go-Lab Ecosystem
2. Preparation of a workshop on the Go-Lab Ecosystem
3. Preparation of a conference presentation on the Go-Lab Ecosystem
4. Preparation of a webinar/online training on the Go-Lab Ecosystem
5. Delivery of a teacher training on the Go-Lab Ecosystem
6. Delivery of a workshop on the Go-Lab Ecosystem
7. Delivery of a conference presentation on the Go-Lab Ecosystem
8. Delivery of a webinar/online training on the Go-Lab Ecosystem

The reporting is considered completed if an ambassador fulfilled the above listed steps.

Reflecting on the strategy of working with ambassadors on a feedback on a qualitative aspect of the Go-Lab Ecosystem integration at a school level, there will be two more tasks added to this list in 2019:

1. Writing of an ambassador's case study and at least one more teacher's case study on the use of Go-Lab Ecosystem in class
2. Writing a report on a successful implementation of the Go-Lab Ecosystem at school level (case studies collected from school administration and/or headmasters)

6. Next-Lab Teacher Training Institutions (TTIs)

6.1 Introduction

The Teacher Training Institutes (TTIs) framework has continued growing throughout the 2nd year of the project and consolidated within those organizations that were already part of the framework in year 1. Table 4 presents the list of the 19 TTIs that are currently part of the framework.

Table 4: List of TTI representatives

First Name	Surname	Country	Organization
Ana	Rodrigues	Portugal	**University of Aveiro**
Aritz	Ruiz-González	Spain	**University of the Basque Country, Bilbao Campus**
Eugenijus	Kurilovas	Lithuania	**Vilnius Gediminas Technical University**
Evangelia	Mavrikaki	Greece	**National & Kapodistrian University of Athens**
Fernanda	Couceiro	Portugal	**University of Aveiro**
Filomena	Teixeira	Portugal	**Escola Superior de Educação de Coimbra**
Gursu	Asik	Turkey	**BAUSTEM Center at Bahçe?ehir University**
Hasan	Kapici	Turkey	**Yildiz Technical University**
Jan	van der Meij	The Netherlands	**ELAN (UT)**
Jon	Heywood	United Kingdom	**University of Leicester**
Loreta	Juskaite	Latvia	**Riga Technical University - Distance Education Centre**
Meeli	Rannastu	Estonia	**Tartu Ulikool**
Miikka	Korventausta	Finland	**University of Turku**
Mohammed	Oubella	France	**Institut Français de l'Éducation**
Nurbiha	A Shukor	Malaysia	**Universiti Teknologi Malaysia**
Piedade	Vaz-Rebelo	Portugal	**University of Coimbra**

Romualda	Lazauskaite	Lithuania	**Lithuanian University of Educational Sciences**
Stella	Magid	Israel	**Israel Institute of Technology**
Takis	Angelopoulos	Greece	**GFOSS**

Currently, we are liaising with a number of new institutions which are the in the process of joining the TTIs framework. The following TTI representatives have already been introduced to the programme and attended the 2nd Next-Lab TTIs meeting (Table 5):

Table 5: List of new TTIs (enrolment process)

First Name	Surname	Country	Organization
Cubo Delgado	Sixto	Spain	**Extremadura University**
Lefa	Eva	Greece	**University of Patras/University of Athens**
Pyykkö	Lassi	Finland	**University of Jyväskylä**
Roushias	Christakis	Cyprus	**Cyprus Pedagogical Institute, Ministry of Education and Culture of Cyprus**

Strategy

Go-Lab has now entered the curricula of 9 TTIs. The actual implementation differs among TTIs and also depends on the set-up of the curriculum, the end terms of the study, flexibility and main priorities of the curriculum. As it currently stands, Go-Lab has found a structural place in the TTIs of the following Next-Lab partners: Cyprus, Tartu, Turku, and Twente. In addition, there are a number of TTIs outside the Next-Lab consortium where Go-Lab also has been embraced in the curriculum: Coimbra, Aveiro, Basque Country, Malaysia, and Turkey.

In order to meet the target (12 TTI implementations), the project will focus on reinforcing its activities within the already functioning framework and facilitating exchanges among TTIs with similar priorities. Practical support in terms of pedagogical support and advice will also be offered on an ad hoc basis. The different sections below address the new activities and the ongoing successful activities to be reinforced.

6.2 Year 2 activities and materials for TTIs

Training Materials

The TTIs framework outreach plan includes the provision of dissemination materials & support materials, expert support, customization of tools, trainings and exchange of best practices within the innovative TTIs all over Europe, while fostering a network of EU projects within the field of Initial Teacher Education.

As an outcome of the work done by the project partner TTIs, a first draft of Go-Lab implementations for TTIs has been created and shared with the TTIs within the Community

of Practice in Graasp[12]. The document includes a collection of course descriptions and materials aiming for the dissemination and implementation of Go-Lab within the curriculum of TTIs as part of Next-Lab's TTI Framework.

Official recognition

All TTIs were invited to submit their organizations details and logo to be published in the project support website. This will provide recognition to these organizations as "official" Next-Lab collaborators, easing national stakeholders to learn about this new framework of national dissemination & training centres.

Website link: http://support.golabz.eu/support/teacher-training-institutions

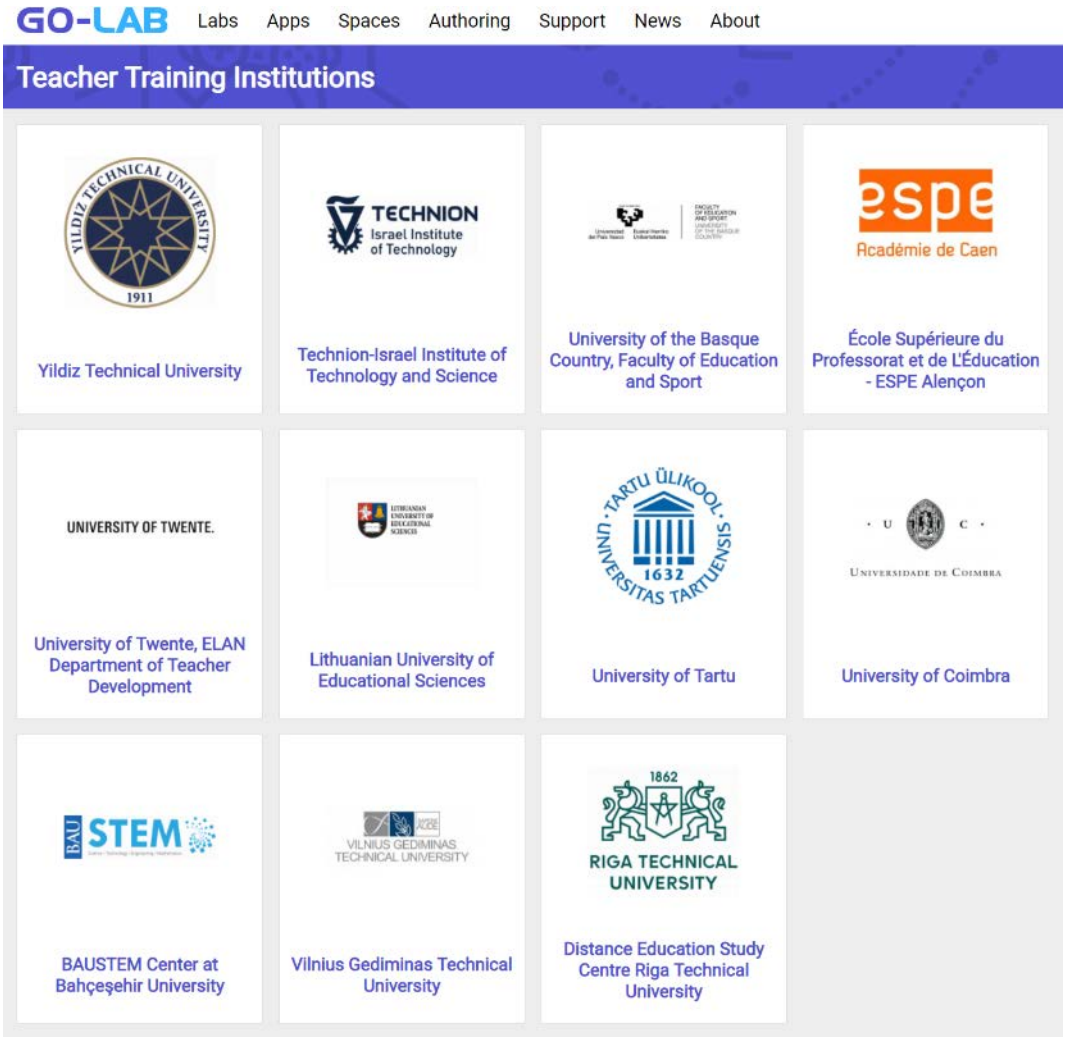


Figure 13: TTIs Official recognition (support page)

ITE Forum

The Next-Lab project has been looking at possible ways to extend the outreach of the TTIs Framework, through the collaboration with ITELab[13], a Knowledge Alliance project between higher education institutions and industry, aiming to foster innovation and knowledge

[12] http://graasp.eu/resources/5c0a4be2c93b8c4527cec538

[13] http://itelab.eun.org/

exchange in initial/preservice teacher education (ITE) and Scientix (to be able to use the support and resources from Scientix).

During the 3rd Scientix conference[14] a first meeting was organised between the 3 projects and their corresponding TTIs. As a major outcome of this meeting, it was agreed to create a common discussion forum, which should definitely support Next-Lab in terms of visibility (and collaboration between the TTIs). In this regard, a webinar with ITELab has already been organized, where our TTI representative in Finland (UTU) presented the Next-Lab project and explained how Go-Lab has been effectively introduced into UTUs curriculum. A blog describing the TTIs Framework has also been composed: http://ite-forum.eun.org/2018/07/04/next-lab-bringing-ict-and-ibse-to-initial-teacher-education/#more-83

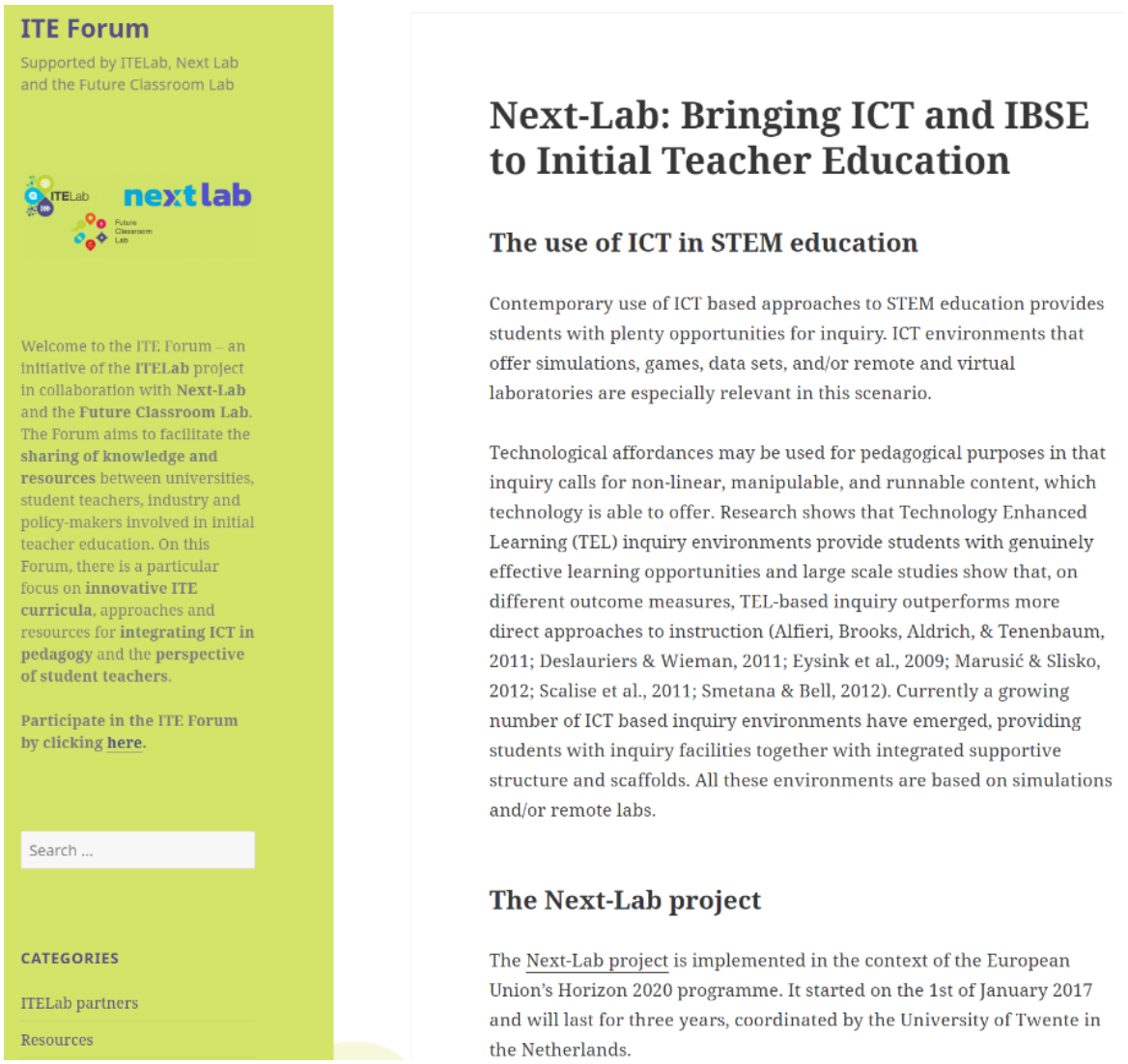


Figure 14: ITE Forum blog screenshot

[14] The 3rd Scientix Conference took place in Brussels, Belgium, from 4 to 6 May 2018. 352 teachers, policymakers, researchers and project managers participated in the conference, making it one of the major networking events in Europe in 2018.

2nd Next-Lab TTIs meeting

The second face-to-face meeting for the Next-Lab TTIs was organized from 29-30 November 2018. The meeting had the following 3 major goals:

- Getting the current TTIs to learn and exchange on their ongoing implementation activities.
- Encourage new TTIs to incorporate Go-Lab into their curriculum.
- Collect data from the different TTIs in order to design a fully tailor-made winter school in 2019 (see below).

Table 5 introduced the new TTI representatives that attended the 2nd face-to-face meeting. The full agenda for the event may be found in Annex 3.

Meeting outcomes & learnings:

- TTIs appreciated the presentations delivered by other more experienced TTI implementers from Estonia, Finland, the Netherlands and Portugal. This meeting allowed them to interact directly with other colleagues undergoing similar processes while receiving first-hand experiences from a variety of teacher education courses.
- Participants also discussed and commented on the Go-Lab implementation guideline (described above). This document will be revised and validated accordingly in the coming period.
- The major concerns for implementation identified were the following: 1) the great resistance to changes at university level, 2) the overwhelming amount of online tools and innovations offered and 3) IBL still not being such a generalized practice.
- Most of the new TTIs had already incorporated Go-Lab to their teaching and intend to formalize this process within the current or next academic year.
- New TTIs were not concerned about how to implement Go-Lab but rather about how to use Go-Lab, as they did not feel proficient enough in relation to the Go-Lab Ecosystem. In this regard, it was agreed that the winter school for TTIs (please see below) will be organized with different levels of training: basic and advanced.
- Participants agreed that the possibility for teachers to be anonymous when publishing would definitely encourage teachers to publish their own ILSs.
- TTIs mentioned the need for more interdisciplinary ILSs based on the big ideas of science and argued that probably ILSs for initial activities with students, should not include the experimental phase (labs), but rather a simplified version while students get acquainted to the Go-Lab Ecosystem.

Winter school for TTIs

A winter school targeting TTIs will be organized in Cascais (Portugal) in March 2019. Overall, the focus will be on supporting TTIs to introduce Go-Lab as part of their training for pre-service teachers. For further information about this session, please see section 3 in D2.8.

6.3 TTIs implementations

The following section presents a short description of a selected number of implementations in seven of the TTI framework countries. Course materials and descriptions have been compiled and may be found in the TTIs Community of Practice in Graasp.

Spain

The Spanish TTI (UPV/EHU) has been working in close collaboration with our Spanish NEC (Deusto University). A teaching and learning module about inquiry based learning (IBL) and Go-Lab Ecosystem was introduced into the elementary pre-service teacher curriculum (Bachelor`s Degree in Primary Education, Subject: Natural sciences in the primary classroom II) at the University of the Basque Country (UPV/EHU) during the 2017/2018 academic year in close collaboration with Deusto University (see Table 6).

Table 6: Spanish course details

DEGREE	SUBJECTS	ACADEMIC YEAR	CREDITS	CENTRE	CAMPUS	UNIVERSITY	NUMBER OF STUDENTS WHO PARTICIPATED
Bachelor`s Degree in Primary Education	Natural Sciences in the Primary Classroom II	3	9 ECTS	Faculty of Education and Sport	Álava	UPV/EHU	100

Besides the trainings offered by the TTI, a small group of students is conducting a research thesis about curriculum analysis within Go-Lab implementation.

Additionally, Deusto University has also established contact with the University of Extremadura and will be running trainings for their staff targeting teacher trainers at both pre-service and in-service level.

Portugal

In the case of Portugal we have two different institutions involved: “Escola Superior de Educação de Coimbra (ESEC)” and the “University of Coimbra (UC)”. Together, these TTIs have presented a common action plan including official courses both for teacher trainers and pre-service teachers. Apart from the shared activities, the UC has also included a training within the university programme for elementary and secondary students (~80 students attending) supported by NUCLIO, and one more general training for other education related students (~70 students).

Finland

Our Finish TTI belongs to the University of Turku which is part of the consortium of the Next-Lab project and a Next-Lab Expertise Centre (NEC). The TTI has already implemented one training as part of the curriculum within the department of Teacher Education. Below you may find in which courses Go-Lab was introduced into the pre-service teacher curriculum at the University of Turku during the 2017/2018 academic year (see Table 7). The curricula of the first two courses are written only in Finnish. The third course Simulations and Games in Education is also available in English.

Table 7: Finish course details

Course Code	Title	Credits	Number of students who participated
KASA3271 PEDA a1[1]	Aineenopettajuuteen kehittyminen (Development to be a subject teacher)	6ECTS	20
LUOT1920 TVTp6	Tieto- ja viestintätekniikan opetuskäytön projekti (ICT in education project)	6ECTS	20
EDUT5104[3]	Simulations and Games in Education	5ECTS	15

The curricula to which the course belongs are: Pedagogical Studies for Subject Teachers[15], Usage of ICT in Education[16], Master's Degree Programme in Education and Learning[17].

Estonia

The Estonian TTI (University of Tartu) has also been leading in the organization of dissemination events with other universities and trainings. The TTI is also responsible for the implementation of changes within the Estonian National testing System for it to include Go-Lab labs and other Go-Lab Ecosystem tools. Table 8 shows the Estonian courses where Go-Lab has been implemented while the full information is available online[18].

Table 8: Estonian course details

Course Code	Title	Credits	Number of students who participated
SVHI.01.005[1,2]	Inquiry Learning	3ECTS	22
SVHI.06.003[3,4]	Inquiry Learning	3ECTS	24
SVHI.06.004[4]	Using Innovative Technologies that Support Inquiry Learning	6ECTS	9

Curricula to which the course belongs to are: Primary School Teacher (Master of Arts in Education (Primary School Teacher)), Teaching Natural and Exact Sciences at Lower Secondary School (Bachelor of Arts in Education), Special Education (Bachelor of Arts in Education), and Educational Technology (Master of Arts in Educational Technology).

Turkey

Yildiz Technical University has been especially active in the research of new educational technologies with specific focus on the Go-Lab Ecosystem. The institution has also implemented Go-Lab in its curriculum and organized a study with 38 pre-service science teachers, junior students in the public university (7 male, 31 female; Mage=22, 3 years, SD=0,79). Participants were registered at pedagogical and teaching courses such as curriculum and planning in science education and teaching methods before taking the

[15] https://nettiopsu.utu.fi/opas/opintojakso.htm?rid=26677&idx=0&uiLang=fi&lang=fi&lvv=2017

[16] https://nettiopsu.utu.fi/opas/opintojakso.htm?rid=26677&idx=0&uiLang=fi&lang=fi&lvv=2017

[17] https://opas.peppi.utu.fi/fi/opintojakso/EDUT5104/8684

[18] https://www.is.ut.ee/pls/ois/!tere.tulemast

laboratory application course, in which the study was implemented. BAUSTEM Centre has allocated its efforts within a professional development online programme targeting ~1200 teachers in the area of "STEM integrated lessons plans". The course includes 92 hours training during 8 months, lesson plan preparation and classroom implementations. The TTI has also been networking with a number of Turkish universities and is planning to launch pre-service teacher trainings next semester.

The Netherlands

Go-Lab was introduced in two courses of the master program of the pre-service teacher training curriculum at the University of Twente during the 2017/2018 academic year (see Table 9). Three other important topics related to Go-Lab are part of the same courses: the effectiveness of practical work, inquiry learning, and the use of digital media (digital platforms where teachers can find and post learning materials, e.g., www.wikiwijs.nl). The full description of the courses is available online[19] and a brief export is provided here:

Table 9: Dutch course details

Course Code	Title	Credits	Number of students who participated
201700046	Vakdidactiek 2 Natuurkunde[1]	5ECTS	8
201700047	Vakdidactiek 2 Scheikunde[1]	5ECTS	3

These two courses translate as Physics Pedagogy for master students and Chemistry Pedagogy for master students

Cyprus

Go-Lab was introduced into the pre-service teacher curriculum at the University of Cyprus in two courses during the 2017/2018 academic year. These courses belong to the Education in Primary School curriculum. The first course (EDU 336) is mandatory (third semester), while the second course (EDU 477) is part of a specialization that students may select during their third year of studies (Specialisation in Science Education). EDU 477 is one out of the three courses that are required for this specialization. Courses available at the University of Cyprus can be accessed at the university website20. From the menu bar click on "Publications in English", then choose the "Annual Publications" and open the Undergraduate Prospectus 2016 – 2018. This PDF file provides detailed descriptions of all undergraduate courses by department. To find the descriptions of the courses where Go-Lab was used in the 2017/2018 academic year, search for the Faculty of Social Sciences and Education, and the Department of Education. Then, find the courses by their course code, as shown in Table 10.

[19] https://osiris.utwente.nl/student/OnderwijsCatalogusZoekCursus.do

[20] http://www.ucy.ac.cy/publications/en/

Table 10: Cypriot course details

Course Code	Title	Credits	Number of students who participated
EDU 336	The Teaching of Natural Sciences	5ECTS	60
EDU 477	Computer Science Applications in the Teaching of Science in Elementary School	5ECTS	15

7. Policy makers

As it has already been presented in D5.3 and reinforced in D5.4, the role of policy-makers in the establishment and mainstreaming of the Go-Lab Ecosystem, is of great importance. European Schoolnet (EUN) as a network of 34 ministries of education is using all available opportunities in order to inform policy-makers on the progress and evolution of the system and to provide them with an insight on the implementations and uptake of the Go-Lab Ecosystem in their countries. Ministries of Education (MoEs) that are members of EUN, have been on the receiving end of a number of actions:

- From a communication and dissemination point of view, EUN has used its channels (e.g. social media, Policy newsletter, meetings with Ministries and annual Eminent conference) in order to provide policy makers with tailored information that will facilitate the entrance of Go-Lab on country level.

- At their meeting on October 4th 2017, the Ministries of Education STEM representatives working group (MoE STEM WG) was informed about Next-Lab's latest developments and particularly the work of Go-Lab Ambassadors and the Teacher Training Institutions (TTIs) scheme. The Ministries of Education STEM representatives working group is composed of 20 MoE representatives (19 countries). The overall objective of this working group is to help lay the foundations for medium and long-term strategies and activities between Ministries of Education and European Schoolnet in the field of STEM education, following an agenda that addresses the ministries priorities and main interests.

  During this meeting, a number of MoEs representatives requested to get in touch with the Go-Lab Ambassadors in their respective countries, which are managed and supported by EUN. The reason for that is that MoEs wanted to support the Ambassadors in the organization of their country activities (dissemination and teachers' trainings) but they also welcomed the possibility to attend schools' implementations in order to experience the impact of the Go-Lab Ecosystem themselves. As a result, contacts have been established between the MoEs and the Go-Lab Ambassadors of the following countries: Belgium, France, Israel, Romania, Turkey, Slovakia, and Malta. Moreover, the MoEs STEM WG representatives received all information regarding the TTIs scheme, its aim and status, in order to disseminate it and facilitate the recruitment of more TTIs.

- The Portuguese MoE, and in particular the team focusing on the use of digital tools in education requested more information on the project from EUN. EUN introduced the person to the Next-Lab partner in Portugal (NUCLIO) who eventually attended the Go-Lab Summer school 2018. Exchanges of information with the particular Ministry department are still underway.

The next activities with MoEs include:

- The next meeting of the MoE STEM WG will take place in Lisbon on the 12th December 2018. This meeting, attended by 21 Ministries of Education from 20 European countries, will be co-organized between Scientix and Next-Lab. This will be a chance for the Next-Lab coordinators and EUN to present what is working and what needs to be done in order to keep Go-Lab running beyond the duration of the project. The agenda for this meeting can be found in Annex 3.

  From the result of this meeting the next actions will need to be defined.

8. Conclusions

This report provides a summary of all communication and dissemination related activities carried out in 2018 by the Next-Lab NECs and Ambassadors while it serves as a status update report regarding the main types of outreach activities and the role of the respective stakeholders.

As established in D1.1, WP1 has the challenging role of building and sustaining relations between Next-Lab and project's main stakeholders: teachers, Teacher Training Institutes and policy makers. The available data across the different dissemination platforms (as demonstrated in Sections 3 and 4), shows that Next-Lab is keeping the momentum of the 1st project year, and has achieved to not only train a larger amount of teachers but to also deliver a higher number of outreach activities.

The results presented in this report (Section 4 "NECs", Section 5 "Ambassadors", Section 6 "TTIs" and Section 7 "Policy makers"), reveal that in terms of strategy, specific adaptations had to be implemented in order to address the needs of these specific groups but to also ensure their engagement and commitment. An example of such adjustment is the specific training on social media communication that has been provided to the Go-Lab Ambassadors as part of the bi-annually training. The training was the outcome of a Go-Lab Ambassadors specific need, closely related to their role and the nature of their tasks. Another example can be seen within the work of the TTIs network and the focus on curriculum implementation that reflects not only in the recently organised TTIs meeting (November 2018) but also led to the composition of document describing the TTIs curriculum implementations and the organization of a Winter school for TTIs in 2019.

In the course of the 3rd project year more adaptations and responsive actions are still to be expected. The need to sustain the project and ensure that its main actors have in hand all necessary tools in order to support further implementations remains as one of the project's top priorities.

Annex 1 – Year 2 online and face-to-face dissemination activities:

Table 11: Year 2 online and face-to-face European dissemination activities

Country	City	Date	Audience Type	Nr. Att.	Title / Description
Austria	Vienna	04/12-06/12/2018	Other		ICT 2018 exhibition in Vienna, Austria. Next-Lab project booth.
Belgium	Brussels	29-01-2018		282	SCIENTIX WEBINAR: BRINGING ONLINE EXPERIMENTS TO YOUR CLASSROOM WITH NEXT-LAB
Belgium	Brussels	01-06-2018	Teacher Trainers	30	Visit of 30 teacher trainers from Erasmushogeschool Brussels to Future Classroom Lab
Belgium	Brussels	21/11/2018	Other		.eu Awards ceremony 2018
Belgium	Brussels	16.10.2018			Bringing ICT and IBSE to Initial teacher Education
Cyprus		29/06/2018	Other		News blog: All New and Updated Apps!
Cyprus	Larnaca	27/02/2018	Other	63	Investigating asteroid fall on earth using a virtual lab / Implementation of an ILS in a public primary school. 60 students and their teachers (3 teachers) participated in a workshop that has been organized in their school in which they had the opportunity to try an ILS prepared for the purposes of the event. The students worked in groups of four and completed the activities of the ILS.
Cyprus		26/03/2018	Other		Dissemination of the event done on 24/03/2018
Cyprus		19/01/2018	Other		Scientix Webinar: "Bringing online experiments to your classroom with Next-Lab"
Cyprus		18/07/2018			Newsblog: The Go-Lab Summer School 2018 - Marathin, Greece

Country	City	Date	Audience Type	Nr. Att.	Title / Description
Cyprus		18/07/2018			Go-LabEcosystem Nomination for .eu Web Awards
Cyprus		18/06/2018	Other		News blog: Meet Next-Lab Expertise Center (NEC) in Cyrpus at ReSciTEG
Cyprus		16/02/2018			New introductory video to the Go-Lab Platfrom
Cyprus		15/02/2018			Dissemination of the event done on 14/02/2018
Cyprus	Larnaca	14/02/2018	Other	47	Investigating asteroid fall on earth using a virtual lab / Implementation of an ILS in a public primary school. 45 students and their teachers participated in a workshop that has been organized in their school in which they had the opportunity to try an ILS prepared for the purposes of the event. The general idea of the event was the use of new and innovative technologies in education. Specifically, the students worked in groups of two and completed the activities with emphasis on the virtual lab.
Cyprus		10/10/2018			World Space Week - ILS: Thru the eyes of Galileo
Cyprus		10/10/2018			World Space Week - ILS: A journey to space
Cyprus		10/10/2018			World Space Week - ILS: Astronaut's job = Cool!
Cyprus		09/03/2018	Other		Go-Lab Summer School 2018: Call for teachers
Cyprus	Nicosia	07/05/2018	Other	50	Investigating asteroid fall on earth using a virtual lab / Implementation of an ILS in a public primary school. 50 students and their teachers (4 teachers) participated in a workshop that has been organized in their school in which they had the opportunity

Country	City	Date	Audience Type	Nr. Att.	Title / Description
					to try an ILS prepared for the purposes of the event. The students worked in small groups (2-4 members) and completed the activities of the ILS.
Cyprus		06/09/2018			.eu Web Awards announcement
Cyprus		05/10/2018			World Space Week - ILS: Galaxy classification and formation
Cyprus		05/03/2018	Other		The Electrical Circuit Lab wins the 2018 GOLC International Online Laboratory Award
Cyprus		02/03/2018	Other		Dissemination of the event done on 27/02/2018
Cyprus	Nicosia	29/11/2018	Other	20	My e-class: Innovative technological tools in Learning in Natural Sciences / During this event 20 secondary students visited the University of Cyprus to meet scientist from different departments and get informed about their work. The Department of Education was represented by our research group (Research in Science and Technology Education Group) and among other the students were introduced to the Go-Lab Sharing Platform and they tried some online labs with the support of the instructors.
Ecuador	Ibarra	15/05/2018	Educational authorities	2	Next-Lab
Estonia	Tartu	25/5/2018	-		Estonian Educational Researchers and Teachers participate in the Spring School of Inquiry Learning in Bilbao
Estonia	Riga	15/05/2018	Academic / Researcher	12	Introduced Go-Lab to university people at Riga Technical University during a 3 hour presentation and hands-on workshop.
Estonia	Tallinn	29/5/2018	Local Secondary School Teachers	50	eVent 2018 – the Digital Innovation Day. Introduction about how Next-Lab and

Country	City	Date	Audience Type	Nr. Att.	Title / Description
					Graasp can support co-creation processes in IBL
Estonia		28.05.2018	-		Tartu haridusteadlased loovad koostöökontakte Taiwanis
Finland	Turku	10/08/2018	Academic / Researcher	5	Educational Technology
Finland	Turku	19/09/2018	Other	24	21st century skills
Finland	Turku	24/09/2018	International Primary School Teachers	21	21 first century skills
Finland	Turku	16.05.2018	Other	20	STEM Practices and implementation of Go-Lab in the Department of Teacher Education - Webinar in ITEForum
Finland	Hämeenlinna	12.04/13.04 .2018	Other	2000	Interaktiivinen Tekniikka Koulutuksessa (ICT in Schools)
Finland	Turku	19.4.2018	Academic / Researcher	100	EdeDevelop - Seminar for the teachers, researcher and students of the Faculty of Education (UTU)
Finland	Jyväskylä	24.9.2018	Teacher Trainers / Academic / Researcher	6	Presentation of Go-Lab project to the University of Jyväskylä (TTI)
Finland	Turku	6.9.2018	Local Primary School Teachers	20	Presentation of Next-Lab project and Go-Lab-Go-Lab Ecosystem for national meeting of Network of Digital Learning and Teaching
Finland	Turku	30.9.2018	Academic / Researcher	100	EdeDevelop - Conference for the teachers, researcher and students of UTU Dep. of Education
France		May 2018	Local Secondary School Teachers	400	Newsletter about an ILs about astronomy (Liaison Committee Astronomers Teachers)
Germany	Kiel	21-09-2018	Local Secondary School Teachers	30	Impulskongress: Digitale Bildung und Fachunterricht
Germany	Kiel	21-09-2018	Local Secondary	200	Impulskongress: Digitale Bildung und Fachunterricht

Country	City	Date	Audience Type	Nr. Att.	Title / Description
			School Teachers		
Germany	Muenchen	08/04/2018	Academic / Researcher	80	Building engaging and effective instruction: Does inquiry learning alone suffice to do the job?
Germany	Berlin	15-09-2018	Local Secondary School Teachers	28	Teachers' meeting
Germany		CW22 2018			Go-Lab Lab Of The Week (LOTW); Disseminated on Facebook (group and page), Twitter, Google+
Germany		CW21 2018			Go-Lab Lab Of The Week (LOTW); Disseminated on Facebook (group and page), Twitter, Google+
Germany		CW20 2018			Go-Lab Lab Of The Week (LOTW); Disseminated on Facebook (group and page), Twitter, Google+
Germany		CW19 2018			Go-Lab Lab Of The Week (LOTW); Disseminated on Facebook (group and page), Twitter, Google+
Germany		CW18 2018			Go-Lab Lab Of The Week (LOTW); Disseminated on Facebook (group and page), Twitter, Google+
Germany		CW17 2018			Go-Lab Lab Of The Week (LOTW); Disseminated on Facebook (group and page), Twitter, Google+
Germany		CW16 2018			Go-Lab Lab Of The Week (LOTW); Disseminated on Facebook (group and page), Twitter, Google+
Germany		CW15 2018			Go-Lab Lab Of The Week (LOTW); Disseminated on Facebook (group and page), Twitter, Google+
Germany		CW14 2018			Go-Lab Lab Of The Week (LOTW); Disseminated on Facebook (group and page), Twitter, Google+
Germany		CW13 2018			Go-Lab Lab Of The Week (LOTW); Disseminated on Facebook (group and page), Twitter, Google+
Germany		CW12 2018			Go-Lab Lab Of The Week (LOTW); Disseminated on

Country	City	Date	Audience Type	Nr. Att.	Title / Description
					Facebook (group and page), Twitter, Google+
Germany		CW11 2018			Go-Lab Lab Of The Week (LOTW); Disseminated on Facebook (group and page), Twitter, Google+
Germany		CW10 2018			Go-Lab Lab Of The Week (LOTW); Disseminated on Facebook (group and page), Twitter, Google+
Germany		CW09 2018			Go-Lab Lab Of The Week (LOTW); Disseminated on Facebook (group and page), Twitter, Google+
Germany		CW08 2018			Go-Lab Lab Of The Week (LOTW); Disseminated on Facebook (group and page), Twitter, Google+
Germany		CW07 2018			Go-Lab Lab Of The Week (LOTW); Disseminated on Facebook (group and page), Twitter, Google+
Germany		CW06 2018			Go-Lab Lab Of The Week (LOTW); Disseminated on Facebook (group and page), Twitter, Google+
Germany		CW05 2018			Go-Lab Lab Of The Week (LOTW); Disseminated on Facebook (group and page), Twitter, Google+
Germany		CW04 2018			Go-Lab Lab Of The Week (LOTW); Disseminated on Facebook (group and page), Twitter, Google+
Germany		CW03 2018			Go-Lab Lab Of The Week (LOTW); Disseminated on Facebook (group and page), Twitter, Google+
Germany		CW02 2018			Go-Lab Lab Of The Week (LOTW); Disseminated on Facebook (group and page), Twitter, Google+
Germany		CW01 2018			Go-Lab Lab Of The Week (LOTW); Disseminated on Facebook (group and page), Twitter, Google+
Germany	Saarlouis	25.05.2018	Local Secondary School Teachers	12	Kick-Off meeting at Max-Planck-Gymnasium Saarlouis. Go-Lab presentation and discussion of next steps.
Germany		24.04.2018			What You Need To Know About The Changes In The Learning Analytics (LA) Apps

Country	City	Date	Audience Type	Nr. Att.	Title / Description
Germany	Hannover	23.02.2018	Other	25	DIDACTA Exhibition (focused on products for school education, such as software, digital and print school books, lab equipment, etc.). D. Dikke visited booths of potential dissemination and exploitation partners from Germany, introduced Go-Lab and established contacts.
Germany		20.03.2018			Take Part To The Next-Lab Competition And Win A Trip To The Next-Lab Autumn School In Estonia!
Germany	Friedrichsthal	17.04.2018	Local Secondary School Teachers	3	Implementation of the Go-LabEcosystem and IMC LMS in Montessori School Saarbrücken. Teacher training & support.
Germany		15.02.2018			The Electrical Circuit Lab Wins The 2018 GOLC International Online Laboratory Award!
Germany	Friedrichsthal	13.03.2018	Local Secondary School Teachers	3	Implementation of the Go-LabEcosystem and IMC LMS in Montessori School Saarbrücken. Teacher training & support.
Germany	Friedrichsthal	09.01.2018	Local Secondary School Teachers	7	Kick-Off meeting at Montessori School Saarbruecken. Brief presentation of Go-Lab and discussion of next steps.
Germany	Friedrichsthal	08.02.2018	Local Secondary School Teachers	3	Implementation of the Go-LabEcosystem and IMC LMS in Montessori School Saarbrücken. Teacher training & support.
Germany		07.03.2018			Stem Discovery Week 2018: Call For Action
Germany		06.03.2018			Go-Lab Summer School 2018: Call For Teachers
Germany	Friedrichsthal	March 2018	Local Secondary School Teachers	1	Telesupport for Montessori School Saarbruecken.
Germany	Friedrichsthal	Feb 2018	Local Secondary School Teachers	1	Telesupport for Montessori School Saarbruecken.
Germany		02.03.2018			Artcile in CheckPoint eLearning ("Von der Vorlesung ins virtuelle Laborpraktikum"/"From a

Country	City	Date	Audience Type	Nr. Att.	Title / Description
					lecture to a virtual lab practice"; interview with D. Dikke focusing on potential use of Go-LabEcosystem in university context)
Germany	Frankfurt am Main	21/06/2018	Other	9	Presentation for Senior Expert Chemists (SEC; association of retired chemists, who provide lectures for students)
Germany		Aug 2018	Other		Article at CheckPoint eLearning ("Experimentbasiertes Lernen leicht gemacht" - "Expertiment-based learning in an easy way")
Germany		June 2018			All New and Updated Apps!
Germany		June 2018			The 22nd Science Projects Workshop In The Future Classroom Lab
Germany		June 2018			Next-Lab Activities in Cyprus
Germany		June 2018			Next-Lab Teachers! Your Feedback Is Needed!
Germany		July 2018			The Go-Lab Summer School 2018 - Marathon, Greece
Germany		Sept 2018			Go-Lab Goes Taiwan - Taipei Workshop
Germany		Oct 2018			Join Go-Lab Summer Schools 2019
Germany		Oct 2018			Golabz.eu as a Finalist for the .eu Web Awards
Germany		Oct 2018			Bringing ICT and IBSE to Initial Teacher Education
Germany		Oct 2018			Go-Lab in Portugal
Germany		CW23 2018			Go-Lab Lab of the Week (LOTW) series

Country	City	Date	Audience Type	Nr. Att.	Title / Description
Germany		CW24 2018			Go-Lab Lab of the Week (LOTW) series
Germany		CW25 2018			Go-Lab Lab of the Week (LOTW) series
Germany		CW26 2018			Go-Lab Lab of the Week (LOTW) series
Germany		CW27 2018			Go-Lab Lab of the Week (LOTW) series
Germany		CW28 2018			Go-Lab Lab of the Week (LOTW) series
Germany		CW29 2018			Go-Lab Lab of the Week (LOTW) series
Germany		CW30 2018			Go-Lab Lab of the Week (LOTW) series
Germany		CW31 2018			Go-Lab Lab of the Week (LOTW) series
Germany		CW32 2018			Go-Lab Lab of the Week (LOTW) series
Germany		CW33 2018			Go-Lab Lab of the Week (LOTW) series
Germany		CW34 2018			Go-Lab Lab of the Week (LOTW) series
Germany		CW35 2018			Go-Lab Lab of the Week (LOTW) series
Germany		CW36 2018			Go-Lab Lab of the Week (LOTW) series
Germany		CW37 2018			Go-Lab Lab of the Week (LOTW) series
Germany		CW38 2018			Go-Lab Lab of the Week (LOTW) series

Country	City	Date	Audience Type	Nr. Att.	Title / Description
Germany		CW39 2018			Go-Lab Lab of the Week (LOTW) series
Germany		CW40 2018			Go-Lab Lab of the Week (LOTW) series
Germany		CW41 2018			Go-Lab Lab of the Week (LOTW) series
Germany		CW42 2018			Go-Lab Lab of the Week (LOTW) series
Germany		CW43 2018			Go-Lab Lab of the Week (LOTW) series
Germany		CW44 2018			Go-Lab Lab of the Week (LOTW) series
Germany		CW45 2018			Go-Lab Lab of the Week (LOTW) series
Germany		CW46 2018			Go-Lab Lab of the Week (LOTW) series
Germany		CW47 2018			Go-Lab Lab of the Week (LOTW) series
Germany		CW48 2018			Go-Lab Lab of the Week (LOTW) series
Germany		CW49 2018			Go-Lab Lab of the Week (LOTW) series
Germany		CW50 2018			Go-Lab Lab of the Week (LOTW) series
Germany		CW51 2018			Go-Lab Lab of the Week (LOTW) series
Germany		CW52 2018			Go-Lab Lab of the Week (LOTW) series
Germany		CW27 2018			Go-Lab Do you know? (DYK) series

Country	City	Date	Audience Type	Nr. Att.	Title / Description
Germany		CW28 2018			Go-Lab Do you know? (DYK) series
Germany		CW29 2018			Go-Lab Do you know? (DYK) series
Germany		CW30 2018			Go-Lab Do you know? (DYK) series
Germany		CW31 2018			Go-Lab Do you know? (DYK) series
Germany		CW32 2018			Go-Lab Do you know? (DYK) series
Germany		CW33 2018			Go-Lab Do you know? (DYK) series
Germany		CW34 2018			Go-Lab Do you know? (DYK) series
Germany		CW35 2018			Go-Lab Do you know? (DYK) series
Germany		CW36 2018			Go-Lab Do you know? (DYK) series
Germany		CW37 2018			Go-Lab Do you know? (DYK) series
Germany		CW38 2018			Go-Lab Do you know? (DYK) series
Germany		CW39 2018			Go-Lab Do you know? (DYK) series
Germany		CW42 2018			Go-Lab Do you know? (DYK) series
Germany		CW43 2018			Go-Lab Do you know? (DYK) series
Germany		CW44 2018			Go-Lab Do you know? (DYK) series

Country	City	Date	Audience Type	Nr. Att.	Title / Description
Germany		CW45 2018			Go-Lab Do you know? (DYK) series
Germany		CW46 2018			Go-Lab Do you know? (DYK) series
Germany		CW47 2018			Go-Lab Do you know? (DYK) series
Germany		CW48 2018			Go-Lab Do you know? (DYK) series
Germany		CW49 2018			Go-Lab Do you know? (DYK) series
Germany		CW50 2018			Go-Lab Do you know? (DYK) series
Germany		CW51 2018			Go-Lab Do you know? (DYK) series
Germany		June 2018			LinkedIn page/group post
Germany		June 2018			LinkedIn page/group post
Germany		July 2018			LinkedIn page/group post
Germany		July 2018			LinkedIn page/group post
Germany		August 2018			LinkedIn page/group post
Germany		Sept 2018			LinkedIn page/group post
Germany		Sept 2018			LinkedIn page/group post
Germany		Oct 2018			LinkedIn page/group post

Country	City	Date	Audience Type	Nr. Att.	Title / Description
Germany		Oct 2018			LinkedIn page/group post
Germany		Oct 2018			LinkedIn page/group post
Germany		Oct 2018			LinkedIn page/group post
Germany		Nov2018			LinkedIn page/group post
Germany	Hamburg	2.-3/11/2018	Local Secondary School Teachers	350	MINT-EC Network headmaster meeting
Greece	Heraklion	15/02/2018	Local Secondary School Teachers	30	The Society for Stem Education in Europe
India	Amritaouri	14/02/2018	Other	25	
Japan	Fukuoka	24/03/2018		20	"Astronomy for education" @ Communicating Astronomy with the Public 2018
Malta	Rabat	21/02/2018	Local Primary and Secondary school teachers, pre-service teachers	23	The use of Go-Lab
Netherlands		30/05/2018	Local Primary School Teachers		Article in Volgens Bartjens, a Dutch magazine for pre- and in-service primary school teachers, as well as teacher trainers: "Onderzoekend leren van wiskunde met online labs"/"Inquiry learning of mathematics using online labs"
Netherlands	Enschede	24/01/2018	Local Secondary School Teachers	200	Twents Meesterschap
Netherlands	Enschede	14/05/2018	Academic / Reseracher	25	Erasmusplus meeting

Country	City	Date	Audience Type	Nr. Att.	Title / Description
Poland	Warsaw	25-27/10/2018		55	STEM and Cultural Heritage
Portugal	Estoril	30/06/2018	Local Secondary School Teachers	10	Teachers' meeting
Portugal	Porto	28/09/2018	Academic / Researcher		Noite Europeia dos Investigadores
Portugal		25/04/2018	Local Secondary School Teachers	920	Next-Lab resource of the week
Portugal	Lisbon	24/07/2018	Local Secondary School Teachers	21	Teachers' meeting
Portugal	Estoril	23/06/2018	Local Secondary School Teachers	10	Teachers' meeting
Portugal	Figueira de Castelo Rodrigo	22/09/2018	Local Secondary School Teachers	17	Teachers Training
Portugal		19/09/2018	Local Secondary School Teachers	204	Facebook Go-Lab Tips
Portugal	Cascais	19/05/2018	Local Secondary School Teachers	18	Teachers' meeting
Portugal	Carnaxide	18/05/2018	Local Secondary School Teachers	16	Teachers' meeting
Portugal	Lisbon	17/05/2018	Local Secondary School Teachers	15	Teachers' meeting
Portugal		16/01/2018	Local Secondary School Teachers	723	Resource of the Week
Portugal		14/05/2018			Resource of the week
Portugal		14/05/2018	Local Secondary School Teachers	900	Next-Lab resource of the week

Country	City	Date	Audience Type	Nr. Att.	Title / Description
Portugal		12/04/2018	Local Secondary School Teachers	1091	Resource of the week
Portugal	Coimbra	11/09/2018	Local Secondary School Teachers	38	Teachers' meeting
Portugal		10/09/2018	Local Secondary School Teachers	409	Go-Lab Tips
Portugal	Guimarães	10/07/2018	Local Secondary School Teachers	27	Teachers' meeting
Portugal	Seixal	08/06/2018	Local Secondary School Teachers	11	Teachers' meeting
Portugal	Carcavelos	07/09/2018	Local Secondary School Teachers	14	Teachers Training
Portugal	Marco de Canaveses	05/07/2018	Local Secondary School Teachers	35	Teachers' meeting
Portugal		05/02/2018	Local Secondary School Teachers	1277	Resource of the Week
Portugal	Oliveira do Bairro	3-5/10/2018	Other		Festival de Ciência de Oliveira do Bairro
Romania	Ploiesti	10/11/2018		TBC	Go-Lab in educational process (national training event in Romania) - general presentation on Next-Lab
Spain	Bilbao	20/03/2018	Educational authorities	24	Introduction Go-LabEcosystem to representatives of the 6 Ukrainian Universities
Spain	Bilbao	18 Apr 2018	Local Primary School Teachers	30	TRASTEA Club
Spain	Bilbao	03 July 2018	Teacher Trainers	50	presentation in the frame of the training for teachers of the Jesuitas School of Basque Country (communities of north part)
Spain	Zaragoza	21-22 Sept 2018	Educational authorities	100	Presentation: Inquiry learning space en tu clase y laboratorios remotos: proyectos Go-Lab y next-lab

Country	City	Date	Audience Type	Nr. Att.	Title / Description
Spain	Gasteiz	04 October 2018	School advisors	22	
Spain	Bilbao	7 November 2018	Local Primary School Teachers	15	Presentation: Inquiry learning space en tu clase y laboratorios remotos: proyectos go-lab y next-lab
Sweden	Malmö	21-22/05/2018	Local Secondary School Teachers	20	Teacher Training
Taiwan	Taipei	21/05/2018			
Ukraine	Kyiv	11 June 2018	Teacher Trainers	25	

Annex 2 – Year 2 European Implementation activities:

Table 12: Year 2 European implementation activities

Country	City	Date	Audience Type	Nr. Att.	Title / Description
Austria	Vienna	13-18.08.2018	International Secondary School Teachers	25	Teachers Training
Belgium	Brussels	05.05.2018	Local Secondary School Teachers	28	"Developing Students 21st Century Skills with Go-Lab"; @Scientix
Belgium	Brussels	26-06-2018	International Primary School Teachers	23	Inquiry learning and use of online laboratories with Go-Lab (within the Scientix course for primary teachers organised at the FCL on 25-29 June 2018)
Belgium	Brussels	15-17.06.2018	Go-Lab ambassadors	36	22nd Science Projects Workshop (SPW) in the Future Classroom Lab
Belgium	Brussels	30.11-01.12.2018	Go-Lab ambassadors	41	25th Science Projects Workshop (SPW) in the Future Classroom Lab
Bulgaria	Sofia	12-13.05.2018	Pre-service Teachers	37	Bringing Scientix and Next-Lab to Bulgarian schools
Cyprus	Limassol	14/03/2018	Local Secondary School Teachers	40	Innovative learning technologies and virtual labs / The workshop was offered twice during the Third Annual Chemistry Conference in Limassol, Cyprus. The conference was co-organized by Cyprus Pedagogical Institute, Cyprus University of Technology, University of Cyprus and Cyprus Chemistry Teachers Society. The duration of each workshop was 1 hour. During the workshop participants were introduced to the Go-LabEcosystem and they were given valuable information and helpful material on how to start using it.

Country	City	Date	Audience Type	Nr. Att.	Title / Description
Cyprus	Larnaca	14/03/2018	Local Secondary School Teachers	11	The use of Go-Lab in STEM education / The Go-Lab Ecosystem was introduced as a powerful tool in STEM education. The participants have been trained on how to search for online labs, apps and inquiry spaces. At the end they were provided with a brief user manual on how to create their own ILSs.
Cyprus	Nicosia	########	Local Secondary School Teachers	23	Go-Lab: An educational platform for searching and creating Inquiry Learning Spaces for science education
Ecuador	Ibarra	16/05/2018	Local Secondary School Teachers	8	Next-Lab
Estonia	Tartu	20/04/2018	Local Secondary School Teachers	20	Inquiry-based Learning in Sciences
Estonia	Tartu	18/05/2018	Local Secondary School Teachers	19	Inquiry-based Learning in Sciences
Estonia	Tartu	18/01/2018	Local Secondary School Teachers	24	Inquiry-based Learning in Sciences
Estonia	Tartu	17/02/2018	Local Secondary School Teachers	30	Learning Biology with Go Lab
Estonia	Tartu	16/02/2018	Local Secondary School Teachers	24	Inquiry-based Learning in Sciences
Estonia	Tartu	########	Pre-service Teachers	22	Inquiry Learning

Country	City	Date	Audience Type	Nr. Att.	Title / Description
Estonia	Tartu	August 2018-January 2019	Pre-service Teachers		Using Innovative Technologies that Support Inquiry Learning
Finland	Turku	17.05.2018	Pre-service Teachers	20	Inquiry learning and 21st century skills in the context of Go-Lab
Finland	Turku	16.2/19.2.2018	Pre-service Teachers	10	Go-Lab mentoring
Finland	Hämeenlinna	11.04.2018	Other	20	Inquiry Learning in Go-Lab Ecosystem
Finland	Turku	11.4./18.4/9.5./11.5.2018	Pre-service Teachers	15	Simulation and games in education - course
Finland	Turku	15.8.2018	Teacher Trainers	5	Inquiry Learning in Go-Lab Ecosystem
Finland	Rauma	12.6.2018	Pre-service Teachers	25	Inquiry learning and 21st century skills in the context of Go-Lab
Finland	Jyvaskyla	########	Pre-service Teachers	15	Go-Lab Ecosystem : The Go-Lab Sharing and Authoring Platform / Brief presentation of the Go-Lab Ecosystem , hands-on activity on how to search labs and training on how to use the Graasp.
France	Lyon	28/05/2018	Local Primary School Teachers	2	Training on the use of the Graasp, Go-lab and creation of an ILs
France	Lyon	25-26/01/2018	Local Secondary School Teachers	30	"Next-Lab plateforme de cours et de classes inversées". This training includes a presentation of Go-Lab Ecosystem, theoretical foundations on the investigation process, but also a significant amount of time devoted to the accompaniment of the realization of projects

Country	City	Date	Audience Type	Nr. Att.	Title / Description
France	Lyon	22-23/06/2018	Local Secondary School Teachers	30	Hack OHERIC, a hackathon for the creation of Inquiry Learning [Numerical] Spaces (ILS)
France	Lyon	21/03/2018	Local Primary School Teachers	2	Training on the use of the Graasp, Go-lab and creation of an ILs
France	Lyon	19-20/03/2018	Local Secondary School Teachers	39	"Next-Lab plateforme de cours et de classes inversées". This training includes a presentation of Go-Lab Ecosystem , theoretical foundations on the investigation process, but also a significant amount of time devoted to the accompaniment of the realization of projects
France	Lyon	17/01/2018	Local Primary School Teachers	2	Training on the use of the Graasp, Go-lab and creation of an ILs
France	Lyon	########	Local Primary School Teachers	6	Training on the use of the Graasp, Go-lab and creation of an ILs
France	Lyon	########	Local Primary School Teachers	6	Training on the use of the Graasp, Go-lab and creation of an ILs
Germany	Friedrichsthal	29.01.2018	Local Secondary School Teachers	2	Training session with two participants from Montessori School Saarbruecken.
Greece	Marathon	08-13.07.2018	International Secondary School Teachers	40	Teacher Training
Greece	Athens	30-01-2018	Local Secondary	6	«Εκπαίδευση στην χρήση ψηφιακών εργαστηρίων (online labs) και εκπαιδευτικών

Country	City	Date	Audience Type	Nr. Att.	Title / Description
			School Teachers		εφαρμογών και στη δημιουργία συνοδευτικού εκπαιδευτικού υλικού»
Greece	Corfu	28-02-2018	Local Secondary School Teachers	15	Go Lab and its application in Science Learning
Greece	Athens	24-03-2018	Local Secondary School Teachers	17	Go Lab and its application in Science Learning
Greece	Athens	24-01-2018	Local Secondary School Teachers	12	«Εκπαίδευση στην χρήση ψηφιακών εργαστηρίων (online labs) και εκπαιδευτικών εφαρμογών και στη δημιουργία συνοδευτικού εκπαιδευτικού υλικού»
Greece	Korinthos	21/02/2018	Local Secondary School Teachers	15	Go Lab and its application in Science Learning
Greece	Tripoli	20-02-2018	Local Secondary School Teachers	16	Go Lab and its application in Science Learning
Greece	Thessaloniki	18-03-2018	Local Secondary School Teachers	9	Use remote and virtual labs for science
Greece	Chios	15-02-2018	Local Secondary School Teachers	18	Go Lab and its application in Science Learning
Greece	Sparti	#########	Local Secondary School Teachers	19	Go Lab and its application in Science Learning
Greece	Argos	#########	Local Secondary School Teachers	12	Go Lab and its application in Science Learning

Country	City	Date	Audience Type	Nr. Att.	Title / Description
Greece	Athenrs	09.11.2018	Pre-service Teachers	18	Δημιουργία εκπαιδευτικών σεναρίων με χρήση ψηφιακών εργαστηρίων (online labs), ψηφιακών εφαρμογών και του διερευνητικού μοντέλου μάθησης
Greece	Athens	13.10.2018	Local Secondary School Teachers	15	STEM Empowering Youth workshop
Japan	Mitaka	########	Local Secondary School Teachers	16	Go-Lab – Structuring inquiry activities with online labs
Lithuania	Vilnius	########	Local Secondary School Teachers	18	Teachers Training
Lithuania	Molėtai	########	Local Secondary School Teachers	20	Teachers Training
Netherlands	Veldhoven	25-01-2018	Local Primary School Teachers	30	***21e eeuwse vaardigheden en wiskunde; een goede combinatie. starters training how to make an ILS***
Netherlands	Gardere n	########	Local Secondary School Teachers	17	NLT-Conferentie 2018 (for teachers)
Netherlands	Ensche de	06/02-04/04 2018	Pre-service Teachers	38	Course Innovative Technology-Based Learning Environments
Netherlands	Zeist	########	Local Secondary School Teachers	20	Leren onderzoeken met digitale labs, Woudschoten Chemie Conferentie
Portugal	Seia	28/04/2018	Local Primary School Teachers	20	6h Workshop for teachers

Country	City	Date	Audience Type	Nr. Att.	Title / Description
Portugal	Sintra	24/02/2018	Local Secondary School Teachers	20	"Teachers and students in the 21st century: learning by inquiry and interdisciplinarity"/ within this certified teachers training course of 25h, 3h were dedicated to show the Go-Lab Portal and how to use Graasp.
Portugal	Évora	20/01/2018	Local Secondary School Teachers	20	"Teachers and students in the 21st century: learning by inquiry and interdisciplinarity"/ within this certified teachers training course of 25h, 3h were dedicated to show the Go-Lab Portal and how to use Graasp.
Portugal	Algés	18/02/2018	Local Secondary School Teachers	20	"Teachers and students in the 21st century: learning by inquiry and interdisciplinarity"/ within this certified teachers training course of 25h, 3h were dedicated to show the Go-Lab Portal and how to use Graasp.
Portugal	Rio Tinto	14/02/2018	Local Secondary School Teachers	20	Teacher training: Teachers created a Graasp account and started to work in their ILS creation by using Apps and Labs presented in the portal. NUCLIO supported the teachers in all the questions and doubts during this training.
Portugal	Porto	########	Local Secondary School Teachers	20	"Teachers and students in the 21st century: learning by inquiry and interdisciplinarity"/ within this certified teachers training course of 25h, 3h were dedicated to show the Go-Lab Portal and how to use Graasp.
Portugal	Oeiras	########	Local Secondary School Teachers	20	"Teachers and students in the 21st century: learning by inquiry and interdisciplinarity"/ within this certified teachers training course of 25h, 3h were dedicated to show the Go-Lab Portal and how to use Graasp.

Country	City	Date	Audience Type	Nr. Att.	Title / Description
Portugal	Cascais	########	Local Secondary School Teachers	20	"Teachers and students in the 21st century: learning by inquiry and interdisciplinarity"/ within this certified teachers training course of 25h, 3h were dedicated to show the Go-Lab Portal and how to use Graasp.
Spain	Bilbao	March-June 2018	Local Primary School Teachers	7	We are working in collaboration with 7 primary school teachers for co-creating ILS. The focus of the group is to design & implement & improve the use of ILS in primary schools.
Spain	Bilbao	Jan-March 2018	Local Secondary School Teachers	8	Training course consists of 4 workshops. The part of training action of regional government on the professional development of the secondary school teachers. UD was selected during the open call to train the teachers.
Spain	bilbao	20/03/2018	Pre-service Teachers	45	Introduction the basic function of Graasp for Deusto graduate students
Spain	Bilbao	########	Pre-service Teachers	40	Introduction the basic function of Graasp for Deusto undergraduate students
Spain	Bilbao	Jan-Apr 2018	Local Primary School Teachers	8	Prest Gara programme
Spain	Barcelona	5-7 July 2018	Local Secondary School Teachers	17	FCRi summer school
Spain	Canary Islands	29.07-04.08.2018	International Secondary School Teachers	15	Teachers Training
Taiwan	Taipei	23/05/2018			Inquiry learning and 21st century skills (communication) in the context of Go-Lab

Country	City	Date	Audience Type	Nr. Att.	Title / Description
Taiwan	Taipei	18-10-2018	Local Secondary School Teachers	25	Teacher training Taipei
Ukraine	Kyiv	11-14 Sept 2018	International Secondary School Teachers	10	Academic staff of teacher training institution (Borys Grinchenko Kyiv University) together with secondary school teachers
Ukraine	Ivano-Frankivsk	19-21 Sept 2018	Local Secondary School Teachers	32	Academic staff of teacher training institution (Precarpathian National University) together with secondary school teachers
Ukraine	Odesa	12,13,15 Nov 2018	Teacher Trainers	20	

Annex 3: Agendas

Table 13: 2nd Next-Lab TTIs meeting Day 1 agenda

Thursday 29th November 2018

Time	Session
12:30 – 13:30 (60')	Registration & lunch
13:30 – 13:40 (10')	Welcome by EUN
13:40 – 14:00 (20')	Tour de table
14:00 – 14:45 (45')	Group discussion: - What is your institution doing in the field of ICT & IBSE? - How flexible is university curriculum to incorporate innovative teaching? - Are 21st century skills incorporated into the different teaching programmes?
14:45 – 15:00 (15')	Coffee break
15:00 – 15:45 (45')	Next-Lab TTIs needs workshop
15:45 – 17:15 (1h30)	Participatory design workshop *(by University of Leicester)*
17:15 – 17:30 (15')	Open discussion & conclusions of the day
19:30	Networking dinner

Table 14: 2nd Next-Lab TTIs meeting Day 2 agenda

Friday 30th November 2018

Time	Session
09:00 – 09:15 (15')	Registration & coffee
09:15 – 10:00 (45')	Next-Lab TTIs implementations *(10' per TTI)* - Estonia (University of Estonia) - The Netherlands (ELAN - Twente University) - Portugal (University of Coimbra) - Finland (University of Turku)
10:00 – 10:45 (45')	TTIs planned activities & implementation workshop - Short presentation by the TTIs - Implementation design workshop
10:45 – 11:00 (15')	Coffee break
11:00 – 12:30 (1h30)	Go-Lab session 1: The mystery box (IBSE & Go-Lab) *(by Rosa Doran, NUCLIO)*
12:30 – 13:30	Lunch break
13:30 – 14:30 (60')	Go-Lab session 2: "Dos and don'ts when implementing Go-Lab"
14:30 – 15:00	Next steps, coming activities & closing remarks

Table 15: List of participants

	First Name	Last Name	Country	Organisation
1.	Agueda	Gras-Velázquez	Belgium	EUN
2.	Christos	Roushias	Cyprus	Cyprus Pedagogical Institute, Ministry of Education and Culture of Cyprus
3.	Dulce	Vaz	Portugal	Escola Superior de Educação de Coimbra
4.	Enrique	Martín	Belgium	EUN
5.	Eva	Lefa	Greece	Master program "STEM in Education", University of Patras/University of Athens
6.	Filomena	Teixeira	Portugal	Escola Superior de Educação de Coimbra
7.	Henk	Pol	Netherlands	ELAN - University of Twente
8.	Jelena	Mamčenko	Lithuania	Vilnius Gediminas Technical University
9.	Joerg	Haas	Germany	University of Augsburg
10.	Lassi	Pyykkö	Finland	University of Jyväskylä
11.	Maria da Piedade	Vaz- Rebelo	Portugal	University of Coimbra
12.	Meeli	Rannastu	Estonia	University of Estonia
13.	Miikka	Korventausta	Finland	University of Turku
14.	Pamela	Andrade	United Kingdom	University of Leiscester (ULEIC)
15.	Romualda	Lazauskaitė	Lithuania	Lithuanian University of Educational Sciences
16.	Rosa	Doran	Portugal	NUCLIO
17.	Sixto	Cubo Delgado	Spain	Extremadura University
18.	Stella	Magid	Israel	Technion-Israeli institute for Science and Technology

Figure 15: Agenda MoE STEM WG meeting, Lisbon, 12 Dec 2018

Time	Content
14:00 – 14:10	The Next-Lab project and the Go-Lab ecosystem • Tour de table: what do you know about it?
14:10 – 14:30	The Go-Lab ecosystem • Overview: Go-Lab >> Next-Lab • Golabz including Apps, Labs and ILS • Graasp
14:30 – 14:50	Go-Lab in the different countries: • Use by teachers • Trainings • Contributing organisations
14:50 – 15:10	Future of the Go-Lab ecosystem and sustainability: Golabz, Apps & Labs, Graasp and Training
15:10 – 15:25	Open discussion: • Suggestion of MoE units to be contacted for future support • Suggesiton of support from regional structures • Suggestions of national sources for future support
15:25 – 15:30	Closing remarks regarding the Go-Lab ecosystem

Figure 16: Detailed agenda for the Next-Lab session

Annex 4: National dissemination and Implementations reports

1. National dissemination and implementation report Spain

In the 2nd year of the project, the Spanish Next-Lab Expertise Centre has continued to widespread the Go-Lab Ecosystem idea to the target audience. We worked with primary and secondary school teachers, school administrations, TTIs, policy makers, NGOs that provide services of professional development for in-service teachers. We have introduced the inquiry approach to non-STEM teachers by inviting teachers of other subjects to collaborate in Go-Lab spaces. Such dissemination action makes the Go-Lab Ecosystem attractive for the entire school.

As in previous year, the Spanish NEC used common dissemination tools such as presenting results to the professional communities by using scientific and professional conferences, and circulating project news over newsletters. In addition, we have offered dissemination and implementation events on local, regional, national and international levels. A workshop format is our preferable mean of dissemination. The agenda depends on the level of experience of the participants in the use of the Go-Lab Ecosystem.

1.1 Dissemination Events

1.1.1 Summary of dissemination events

Table 16: Next-Lab Dissemination Events

Title	Location	Date	Description
First 3 steps in Go-Lab Ecosystem	Bilbao, Spain	20 Mar 2018	Introduction Go-Lab Ecosystem to representatives of the 6 Ukrainian Universities (22 participants)
Go-Lab Ecosystem	Bilbao, Spain	18 Apr 2018	TRASTEA Club: introduce Next-Lab, Get familiar with IBSE (30 participants)
Go-Lab Ecosystem	Kyiv, Ukraine	11 June 2018	Introducing the project and Go-Lab Ecosystem(25 participants)
Go-Lab Ecosystem in support of the IBL approach	Donostia, Spain	03 July 2018	Presentation in the frame of the training for teachers of the Jesuits Schools of Basque Country (communities of north part) (50 participants)
IBL in Next-Lab Project	Zaragoza, Spain	21-22 Sept. 2018	The presentation “Classroom Practice: Inquiry learning space en tu clase y laboratorios remotos: proyectos go-lab y next-lab” provided by Elvira González on the 2nd international conference “Innovacíon Educacíon” 21-22 Sept.2018, Zaragoza (100+ participants)
Go-Lab Ecosystem in frame of the Next-Lab project (H2020)	Vitoria-Gasteiz, Spain	04 Oct 2018	Presentation IBSE and Go-Lab Ecosystem for School advisors and policy makers (22 participants)

Dissemination of Next-Lab project	Bilbao, Spain	07 Nov 2018	The dissemination workshop was held in frame of the Trastea teachers´club, The primary school teachers of Basque region participated in this event. (15 participants)

1.1.2 Target audience and impact

The main audience of the dissemination events is primary and secondary school teachers in Spain. The international dissemination activities have addressed representatives of Teacher Training institutions, school sector and education policy makers. The expected impact is raising awareness on the Go-Lab Ecosystem and increasing willingness to incorporate it in the school lessons. More than 230 participants were involved in these activities.

1.1.3 Related materials

The link to the conference paper

https://congresoinnovacion.educa.aragon.es/docs/actas/Espacios%20de%20Comunicaci%C3%B3n/Inquiry%20Learning%20Space%20en%20tu%20clase%20y%20Laboratorios%20Remotos.pdf

1.2 Implementation Activities

1.2.1 Summary of implementation activities

Table 17: Next-Lab implementations

Title	Location	Date	Description
Build ILS: Labs, Apps, and ILSs	Vitoria, Spain	Dec 2017	Training sessions to use grasp.eu and create own ILS. Pre-service teachers of Pedagogical School of UPV, Spain. (100 students)
ILS built together (co-creation action)	Bilbao, Spain	Jan–May 2018	Collaboration work with 7 primary school teachers for co-creating ILS. The aim is to design, implement, and improve the employment of ILS in primary schools.
Go-Lab Ecosystem : from A to Z	Bilbao, Spain	Feb-Apr 2018	Training course (Prest Gara) consists of 4 workshops. It is the part of training action of regional government on the professional development of the secondary school teachers. UD Next-Lab team was selected during the open call to train STEM teachers.(8 participants)
Apps, Labs and Inquiry Spaces in your class	Bilbao, Spain	20 Mar 2018	Introduction of the basic function of graasp.eu for UDeusto graduate students (45 participants)

Title	Location	Date	Description
IBL in a STEM lesson of your school	Barcelona, Spain	5-7 July 2018	Training on IBL to use Go-Lab instruments to design ILS, at least 2 ILSs /teacher. The workshop was organized with support of the FCRi Foundation. (17 participants)
Co-creating Inquiry Spaces for your lesson using Go-Lab Ecosystem	Kyiv, Ukraine	10,11 &14 Sept 2018	Introducing the project and Go-Lab Ecosystem; hands-on work on the creation ILS, discussion methods implementation in classroom. Creating the inquiry materials for teaching in schools (Informatics subject). Testing the didactic materials with students in TTI. (10 participants)
How Go-Lab Ecosystem can help you in your class instruction	Ivano-Frankivsk, Ukraine	19-21 Sept 2018	During 15 in-class and 15 individual work hours school teachers and representatives of TTI created STEM ILSs and incorporated in their class instruction. (32 participants)
Design of the STEM inquiry-based activity: ILS	Odesa, Ukraine	12,13, & 15 Nov.2018	During the 3-day workshop the Go-Lab Ecosystem was introduced. Participants built at least one ILS in national language. After the Next-Lab expert's review the ILSs was published on the Go-Lab ILS collection. The teachers show implementation in their school. (20 participants)

1.3 Target audience and impact

The target audience is primary and secondary school teachers, university students (pre-service teachers) and professors of Teacher Training Institutions on national and international level. Around 240 participants have participated in the implementation activities.

1.4 Related materials

Design of the STEM inquiry-based activity, Odesa, Ukraine

How Go-Lab Ecosystem can help you in your class instruction, Ivano-Frankivsk, Ukraine

2. National dissemination and implementation report Finland

2.1 Dissemination Events

2.2 Summary of dissemination events

The Finnish dissemination of Go-Lab was realised in forms of poster presentations, seminar presentations and personal meetings, both locally and nationally. Table 1 provides an overview of the dissemination events in Finland.

Table 1. Next-Lab Dissemination Events

Title	Location	Date	Description
Interaktiivinen Tekniikka Koulutuksessa (ICT in Schools)	Hämeenlinna	12.4. / 13.4.2018	Poster presentation Inquiry learning in Go-Lab - Co-creation with teachers and researchers on the national conference on ICT in Schools
EduGrow - Research Seminar	Turku	19.4.2018	Presentation of Next-Lab project and Go-Lab-Go-Lab Ecosystem
ITEForum Webinar	Web	16.5.2018	Presentation STEM Practices and implementation of Go-Lab in the Department of Teacher Education
Thai university representatives	Turku	10.8.2018	Introduction to the Go-Lab Ecosystem+ hands on experience as a learner
Chinese school representatives	Turku	19.9.2018	Introduction to the Go-Lab Ecosystem

Title	Location	Date	Description
Chinese education representatives	Turku	25.9.2018	Introduction to the Go-Lab Ecosystem
National meeting of Network of Digital Learning and Teaching	Turku	6.9.2018	Presentation of Next-Lab project and Go-Lab-Go-Lab Ecosystem
Presentation of Go-Lab project to the University of Jyväskylä (TTI)	Jyväskylä	24.9.2018	Presenting the best practices in our TTI, planning of the implementation of Go-Lab in Jyväskylä TTI and future collaboration
EdeDevelop - Seminar	Turku	30.9.2018	Poster presentation Inquiry learning in Go-Lab - Co-creation with teachers and researchers

2.3 Target audience and impact

The ITK conference is the largest educational technology conference in Finland and is attended by around 2000 teachers, school principals, ICT tutors, researchers, and policy makers. Traditionally the first day of the conference is reserved for organizing workshops while the second and third day are following a conference format. On this second and third day there were two sessions around the posters on each day where the attendants of the conference could interact with the poster presenters. The posters were up during the whole conference, so people had the opportunity to come to see the posters during the whole duration of the conference.

EduGrow and EduDevelop reseach seminars are organised annually at the Faculty of Education. The participants are researchers, teachers, students, and other people interested in the activities of the faculty. At the EduGrow seminar we gave a presentation about the Next-Lab project and Go-Lab Ecosystem, at EduDevelop we had a stand with a poster and a number of tablets with different ILSs, the Go-Labz portal and Graasp on different tabs in the browser for quick demonstrations and illustrations during the conversations with the people attending the event. During the event students and teachers were interested to learn about the eco-system, see ILS's, hear more about co-creation.

At the ITEForum webinar organized by European Schoolnet, we presented how STEM education and Next-Lab project is arranged at the Department of Teacher Education, UTU. Participants of the webinar were educators and researchers working in initial teacher education across the Europe.

In August a delegation from the Prince of Songkla University in Thailand was visiting the University of Turku. The delegation consisted of members of the Research Center for Educational Innovations and Teaching and Learning Excellence (director, vice directors) representing different faculties (Faculty of Education, Faculty of Nursing, Faculty of Pharmaceutical science), During their stay one of the sessions was used to introduce them to the Go-Lab Ecosystem, and to provide them with a hands-on experience of the learner perspective in the system.

In September two delegations from China visited the University of Turku. The first delegation consisted of 21 representatives of schools from the Weifang district (13 different schools; primary and middle school). The second delegation consisted of 24 representatives from the Huagzhou Municipality Education (Bureau directors, High school and primary school principals, Primary school teachers and Normal University lecturers). During both events

communication went through a simultaneous translator. This made it more difficult to assess the impact of the session, but the fact that (especially in the second) they were asking questions (e.g. about ILSs for specific topics) gave the impression that they were interested in the Go-Lab Ecosystem.

The day-long visit to the University of Jyväskylä in September was organized to discuss about Go-Lab with researchers and teacher trainers at their Department of Teacher Education (TTI). The main agenda was to talk about the possibilities to integrate Go-Lab into one of their research projects and in the pre-service teacher training for chemistry teachers. As the Jyväskylä had already familiarized themselves with the Go-Lab Ecosystem, the main focus was on sharing the ideas and generating common ground for collaboration.

National meeting of Network of Digital Learning and Teaching was a two-day event for teachers attending on a Specialization in Digital Learning - professional development program. The teachers qualified from this program are working in expert positions on a field of digital learning on various levels of education. At this meeting, we disseminated the opportunities of Go-Lab in education, and built networks for later collaboration.

2.4 Outcomes

EduGrow and EduDevelop seminars were important events to demonstrate Go-Lab to other professionals on the field of education. While the first focused on research (but practitioners with an interest in the research developments in the field also attended), the latter especially targeted also developmental projects, thus attracting more practitioners, and also some school directors. This seminar provided us with contacts to primary school teachers who are interested to implement Go-Lab in their classroom (one scheduled for the 16th on November), with the potential of extending the contact to the whole school.

Contact with the TTI in Jyväskylä started from a workshop organized in Turku on the 19.8.2018 (see below in implementation activities). So far the outcome of the meeting are that the people in Jyväskylä are planning to use Go-Lab in the context of one of their research projects and in the pre-service education for chemistry teachers. For the first aim they will design different versions of an ILS that uses Geogebra as a laboratory (which can later be published). The idea in relation to the second aim will become more articulated after the TTI meeting in Brussels at the end of November where a representative from that University of Jyväskylä will also take part.

The delegation of the Prince of Songkla University in Thailand was generally very interested in the Go-Lab Ecosystem(even thinking of potential value in the non-educational faculties), but it would probably need additional funding (e.g. related training and support).

No tangible outcomes can be linked to the Chinese visits at this point, but the fact that teachers were asking practical questions about the availability of the platform and ILSs and were exploring the Go-Lab site already during the session showed that the session raised their interest and that they saw the potential for using Go-Lab in education.

2.5 Other project dissemination materials

The poster below (Translation: *Inquiry learning in Go-Lab - Co-creation with teachers and researchers)* was used in relation to dissemination events targeting a Finnish audience.

Figure 17: Poster

2.6 Implementation Activities

2.7 Summary of implementation activities

The Finnish implementation activities of Go-Lab included workshops in four Finnish cities, mentoring sessions, and one course. The table 2 provides an overview of these dissemination events.

Table 2. Next-Lab Dissemination Events

Title	Location	Date	Description
Go-Lab mentoring	Turku	16.2. / 19.2.2018	2*2 hrs mentoring for the pre-service subject teachers to support them in preparing of ILSs to be used in their classroom training.
Simulations and Games in Education - Course	Turku	11.4. / 18.4. / 9.5. / 11.5.2018	Introduction to simulations in education. Requirements for integrating simulations in education. Introduction to the Go-Lab

Title	Location	Date	Description
			environment and hands-on Go-Lab workshop.
Inquiry learning in Go-Lab Ecosystem-Workshop	Hämeenlinna	11.4.2018	3 hrs introductory workshop for primary and lower secondary school teachers at *ITK-päivät* (ICT in Education conference)
Inquiry learning and 21st century skills in the context of Go-Lab - Workshop	Turku	17.5.2018	3 hrs workshop for pre-service teachers. Introduction to 21st century skills and inquiry learning. Teacher as a learner - hands-on session in Go-Lab. Introduction to Go-Lab Ecosystem.
Inquiry learning and 21st century skills in the context of Go-Lab - Workshop	Rauma	12.6.2018	6 hrs workshop for pre-service teachers. Introduction to inquiry learning. How Go-Lab can support teacher to implement IL (apps, labs, tools). Hands-on task as a learner/teacher
Inquiry learning in Go-Lab Ecosystem– Workshop on PedaForum	Turku	15.8.2018	2 hrs workshop for teacher trainers. Introduction to Go-Lab Ecosystem(apps, labs, learning analytics tools). Hands-on working as a learner. Modifying ILS to teachers' own needs. Integration in teacher education
Implementation of Go-Lab in classroom	Turku	16.11.2018	2 hrs implementation of exemplary ILS in a classroom and discussion of further activities
Inquiry learning in Go-Lab Ecosystem-Workshop	Turku	27.11.2018 (Not organized yet)	2 hrs workshop for pre-service teachers. Introduction to Go-Lab Ecosystem (apps, labs, learning analytics tools). Hands-on working as a learner. Modifying ILS to teachers' own needs

2.8 Target audience and impact

The mentoring sessions in February 2018 were organized to support the implementation of Go-Lab in pre-service subject teachers' training. Those sessions were follow-up activities for the workshops organized for the same group in 2017. During these sessions we mentored students in their planning of classes to be given as part of their teacher training. After the classes, a feedback session was organized where the students shared their experiences.

The Simulations and Games in Education course in the spring 2018 was held for the first time and meant as a pilot for including it in the next curriculum (for the coming two years). It included general introduction lectures on aspects that pertain both simulations and games in learning (e.g. active learning, motivation, interest in science) and then delved more into the specifics of simulations and games in education. In the simulation part, the Pedaste inquiry model was used as a reference for looking at learning environments and the Go-Lab checklist for good ILSs that was presented to during the Go-Lab spring school in Bilbao was used as a reference for evaluating more specific aspects of learning environments. In the next sessions, first the Go-Lab Ecosystem was introduced and then students interacted first with an ILS as a learner. Students have then been introduced to Graasp and used the

checklist for good ILSs to evaluate an ILS. After these sessions they did an assignment either on games or on simulations

The workshop organized at Hämeenlinna, ITK-päivät (ICT in Education conference), was targeted for primary and lower secondary school teachers. During these workshops, the participants registered to Graasp, and tested and modified ILSs according to their needs. The general impressions towards Go-Lab were excited. At ITK-päivät, the overall rating measured by the participants on a feedback questionnaire after the workshop was 4,0 (on a scale 1 - 5). As an example of open feedback, the participants appreciated that the platform was developed on a ground of research.

On the workshop of May 2018, the participants were pre-service teachers from Cristopher Newport University, Virginia. These students were in Turku on an exchange together with their teachers and the workshop was held as part of their program. The focus of the session was to show how the type of learning environment that Go-Lab provides can support the development of 21st century skills (and relate to the Next Generation Science Standards in the US). Though students were interested their thoughts related more directly to the content of ILSs, while the teachers had a better view on the value of the Go-Lab Ecosystem.

The workshop in June 2018 was organized for Namibian pre-service teachers studying in Rauma TTI. This three year programme educates students from Namibia who will become teacher back in their home country. In the wider context of a course on ICT in education we delivered a one day training that covered the theoretical background, the eco-system, experience as a learner and modifying ILSs. Students were very interested and many were quite actively making modifications to ILSs, exploring the possibilities and different tools. In the end it was also discussed how this could transfer to their home country school system, and in that discussion the Go-Ga project also came up in relation to infrastructural issues.

Implementation of Go-Lab in classroom is a result from the EduDevelop seminar, where an elementary school teacher requested us to come her school to give support in a Go-Lab lesson. Beside the implementation, this school visit is a starting point for a collaboration with further Go-Lab activities in the school.

The introductory workshop on November 2018 is a second round of Go-Lab implementation in the curriculum of ICT side studies in Turku TTI. The participants of the workshop are mainly pre-service class teachers. The above mentioned mentoring sessions will be organized again on the spring 2019 and they are follow-up activities for this workshop.

2.9 Outcomes

In August 2018 a workshop was organized in the context of PedaFroum (the national higher education pedagogy conference). Even though the workshop may have been too specific for the general conference audience, it was successful in the sense that it started the collaboration with the University of Jyväskylä. During and after the workshop it turned out that there were more potential areas for collaboration, which resulted in the one day meeting in Jyväskylä that is described in the dissemination events section and in Jyväskylä attending the TTI meeting in Brussels.

Students in the simulation and games course made some ILSs, but unfortunately these were not published for various reasons. One of the students with a Nigerian background, showed interest in the Go-Ga project, and, rooted in his desire to make the project reach its goal, has later contacted the project coordinator to express interest in contributing to the project. The piloting also gave valuable information that can help us to organize things a bit

differently in a way that it will result in ILSs that will actually be published in Go-Lab during the next time that the course is held.

The workshop with the pre-service teachers from Cristopher Newport University, Virginia probably did not result in direct outcomes, but it did result in the invitation to do also presentations for the Chinese delegations later in the year.

The Namibian pre-service teacher students in Rauma from that took part in the one day workshop will return to Namibia in December and to start doing their internships in the schools there. Now that their departure is approaching, several of these students have contacted us to learn more about the current status of Go-Ga and about possibilities to connect with the project. We sent the latest newsletter to them, suggested them to register and promised to get back to them if we would have interesting or important news related to the project.

2.10 Website, Newsletter and Social Media

2.11 Website

In Finland, we provide a page about Next-Lab on the website of University of Turku as one of the projects under the science learning heading (picture below Figure 18, https://www.utu.fi/en/units/edu/units/okl/research/themes/science-learning/Pages/Next-Lab.aspX). It includes information about the project, links to the main site of the project and our contact details for training requests.

Figure 18: Website

2.12 Social Media Channels

At this point, University of Turku does not have Next-Lab/Go-Lab specific social media accounts. However, Go-Lab was disseminated through Facebook groups for the pre-service teachers on all levels of education in University of Turku at the Turku campus and at the Rauma campus.

Those teachers who have opted in for receiving the general newsletter also receive the newsletter from the project.

3. National dissemination and implementation report Germany

3.1 Dissemination Events

3.2 Summary of dissemination events

In the 2nd year of the project, IMC concentrated on establishing contacts to relevant dissemination and exploitation partners in Germany. A representative from IMC attended the DIDACTA 2018 exhibition for school education products and services (such as software, digital and print school books, lab equipment, etc.), presented the Go-LabEcosystem and established contact to relevant stakeholders. Furthermore, the Go-LabEcosystem was presented to the Senior Expert Chemists (SEC) association, who can act as dissemination partner and multiplier in Germany.

The Golabz Sharing Platform was nominated to the .eu Award 2018 (https://webawards.eurid.eu) in the Laurels category. Representatives from IMC and EUN attended the award ceremony in Brussels, where they networked and established contact to other projects and stakeholders. Finally, the Next-Lab project was presented at the ICT2018 exhibition in Vienna with a booth.

Table 18. Next-Lab Dissemination Events

Title	Location	Date	Description
DIDACTA 2018	Hannover, Germany	23.02.2018	DIDACTA Exhibition (focused on products for school education). IMC representative visited booths of potential dissemination and exploitation partners, introduced Go-Lab and established contacts.
Senior Expert Chemists (SEC) association	Frankfurt a.M., Germany	21.06.2018	Presentation for Senior Expert Chemists (SEC; association of retired chemists, who provide lectures for students). A valuable dissemination partner in Germany.
.eu Award 2018 ceremony	Brussels, Belgium	21.11.2018	Golabz was nominated to .eu Award 2018. Representatives from IMC and EUN attended the ceremony. Networking.
ICT2018 exhibition	Vienna, Austria	03.12-06.12.18	Next-Lab project booth at ICT2018 exhibition in Vienna.

3.3 Target audience and impact

The Next-Lab project and the Go-Lab Ecosystem were presented to potential dissemination and exploitation partners in Germany (companies, associations, related projects), as well as to a broader public, including EU-projects' representatives, researchers, industry representatives, and other stakeholders, who were attending the ICT2018 exhibition.

3.4 Outcomes

Contact to potential dissemination and exploitation partners in Germany (SEC association; around 20 companies from DIDACTA exhibition, SchulCloud project, representative of a school digitalization project in Mecklenburg-Vorpommern, Germany). The Next-Lab project and Go-Lab Ecosystem were presented to hundreds of visitors at the ICT2018 exhibition.

3.5 Related materials

Next-Lab print materials, roll-up, poster, and PowerPoint slides (where applicable).

3.6 Implementation Activities

3.7 Summary of implementation activities

In the 2nd year of the project, IMC established contact to two schools in Saarland, Germany: the Montessori School Saarbruecken (located in Friedrichstahl) and the Max-Planck-Gymnasium Saarlouis. At the Montessori School, a full range of implementation activities took place: starting with a kick-off meeting, over an initial Go-Lab Ecosystem training and three implementation & training sessions, rounded up with tele-support offered during the two months of implementation. At the Max-Planck-Gymnasium, an introductory meeting took place; a follow-up will follow in 2019.

Table 19. Next-Lab Implementation Events

Title	Location	Date	Description
Montessori School Saarbruecken (kick-off)	Friedrichsthal	09.01.2018	Kick-Off meeting at Montessori School Saarbruecken. Brief presentation of Go-Lab and discussion of next steps.
Montessori School Saarbruecken (training)	Friedrichsthal	29.01.2018	Training session with two participants from Montessori School Saarbruecken (school director and teacher)
Montessori School Saarbruecken (implementation)	Friedrichsthal	08.02.2018	Implementation of the Go-Lab Ecosystem and IMC LMS in Montessori School Saarbruecken. Hands-on training, online support.
Montessori School Saarbruecken (implementation)	Friedrichsthal	13.03.2018	Implementation of the Go-Lab Ecosystem and IMC LMS in Montessori School Saarbruecken. Hands-on training, online support.
Montessori School Saarbruecken (implementation)	Friedrichsthal	17.04.2018	Implementation of the Go-Lab Ecosystem and IMC LMS in Montessori School Saarbruecken. Hands-on training, online support.
Max-Planck-Gymnasium Saarlouis (introduction)	Saarlouis	25.05.2018	Kick-Off meeting at Max-Planck-Gymnasium Saarlouis. Go-Lab presentation and discussion of next steps (around 10 participants)

3.8 Target audience and impact

At the Montessori school, the school director, 6-7 teachers, as well as representatives of the parents' committee were involved in the kick-off meeting, where the decision about Go-Lab implementation was taken. In the following meetings, the school director and several teachers were involved (due to the teachers' limited availability, it was not possible to

provide training to all teachers, so the school director decided to participate herself together with a small group of teachers and train their colleagues themselves at a later point).

At the Max-Planck-Gymnasium, the school director together with around 10 teachers (the teachers' committee responsible for the decisions on school development and digitalization) participated in the introductory meeting. A follow-up meeting will take place in 2019.

3.9 Outcomes

At the Montessori school, Go-Lab is implemented and used in STEM-classes. At least one ILS is published in Golabz.

At the Max-Planck-Gymnasium, no decision has been taken so far (as they are working on an overall school digitalization strategy and have to synchronize the selection of different software and learning media).

3.10 Related materials

Next-Lab flyers and leaflets, PowerPoint presentation.

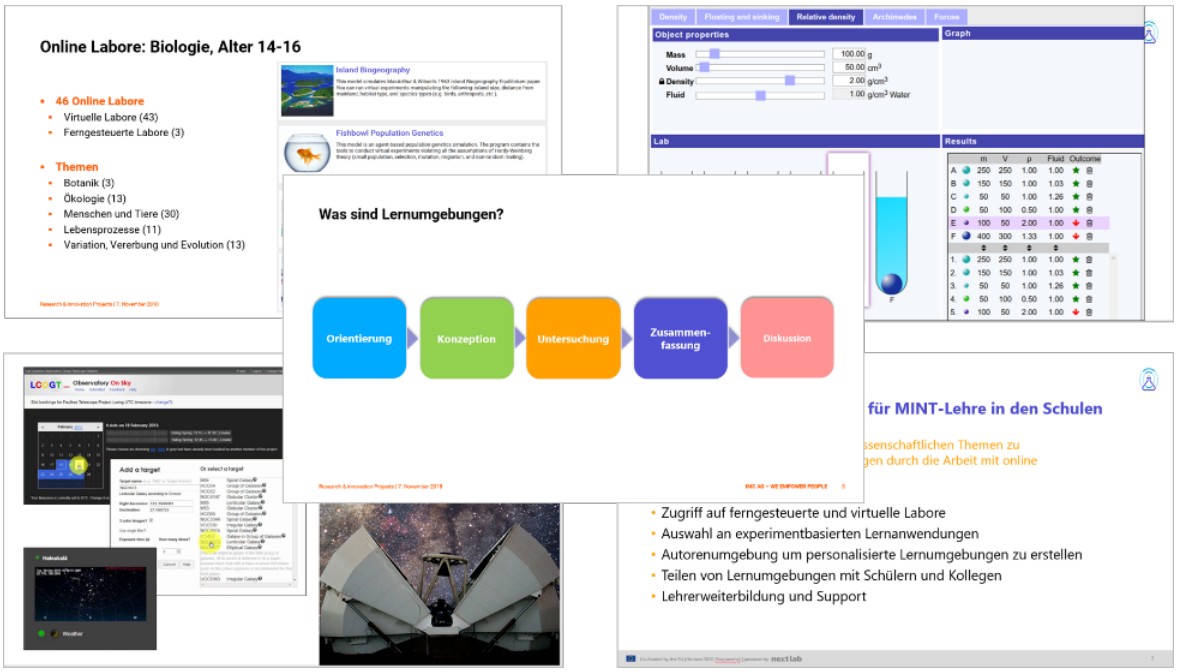


Figure 19: Slides from the presentation for schools

3.11 Website, Newsletter and Social Media

3.12 Website

Next-Lab is presented under "Current projects" at the IMC website. No changes compared to 2017 report.

3.13 Social Media Channels

The Next-Lab project and the Go-Lab Ecosystem have been promoted on IMC's Facebook page.

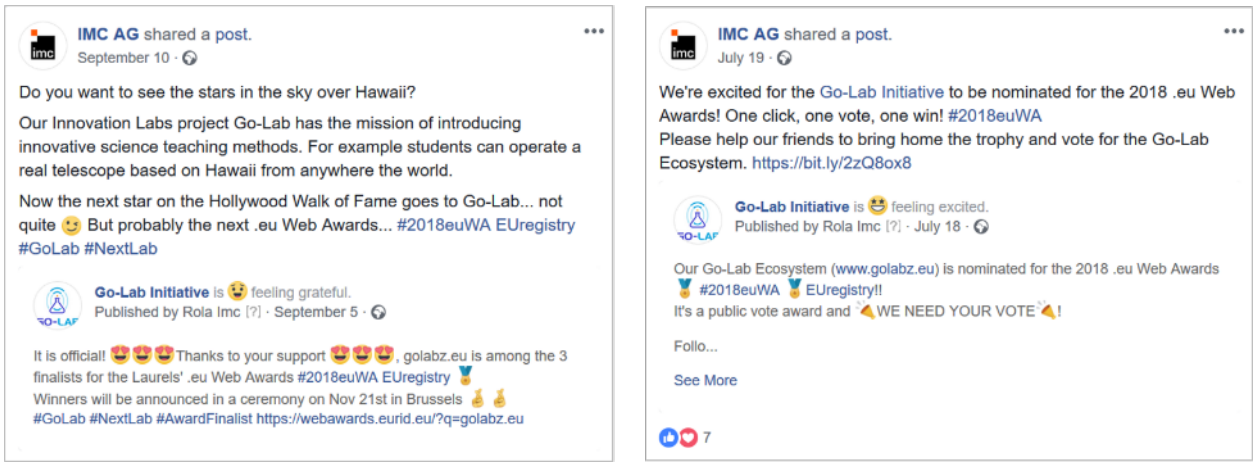


Figure 20: Posts about Go-Lab/Next-Lab on IMC's Facebook page

3.14 Dissemination Channels Figures

Twitter followers	Facebook fans	YouTube channels view	LinkedIn group members	Newsletter	Website unique visitors	Instagram
	Ca. 2,500					

4. National dissemination and implementation report Portugal

4.1 Dissemination Events

4.2 Summary of dissemination events

NUCLIO has disseminated the Next-Lab project in all events that it participated in. This includes science fairs, teachers' meetings, talks in conferences and courses/workshops of other projects that have some affinity with Next-Lab.

Table 20. Next-Lab Dissemination Events

Title	Location	Date	Description
Festa das Estrelas	Cascais	19.05.2018	Presentation of the project during the Science Teachers Annual Meeting promoted by NUCLIO
Teachers' meeting	Marco de Canaveses	05.07.2018	Presentation of the project in a Science teachers' meeting
STORIES of Tomorrow	Carcavelos	07.09.2018	Presentation of the project during a session of the certified teacher training course "Digital platforms in the Space Era: from storytelling to planetary geology"
Encontro Nacional de Astronomia e Astrofísica	Coimbra	10.09.2018	Presentation of the project during the National Astronomy and Astrophysics Meeting, which has a section dedicated to education

Title	Location	Date	Description
Noite Europeia do Investigador	Porto	28.09.2018	Presentation of the project during the European Researchers' Night
Festival de Ciência de Oliveira do Bairro	Oliveira do Bairro	3-5.10.2018	Presentation of the project during the Science Fair to teachers and students
The Go-Lab project	Lisbon	24 Jul 2018	Presentation of the project within the "Eco-Schools" conference
Astronomy for education	Fukuoka	24.03.2018	Presentation of the project at the conference: Communicating Astronomy with the Public 2018
European Planetary Science Conference	Berlin	15.09.2018	Presentation of the project during the National Astronomy and Astrophysics Meeting, which has a section dedicated to education

4.3 Target audience and impact

The target audience of most of the dissemination events were teachers, educators, and science researchers who are interested in education. In the case of the Science Fair and the European Researchers' Night, the target audience also included the school community, with many students and respective families.

4.4 Outcomes

The dissemination events provided many contacts of teachers interested in knowing more about the project. Also many teachers showed interest in attending Go-Lab courses.

4.5 Related materials

Figure 21: Next-Lab was disseminated during the Science Fair at Oliveira do Bairro

4.6 Implementation Activities

4.7 Summary of implementation activities

NUCLIO held certified courses of 6 hours fully dedicated to Next-Lab in two places. Most implementation activities consisted of 3 hour sessions on the Go-Lab Ecosystem within other certified teacher training courses.

Table 21. Next-Lab Dissemination Events

Title	Location	Date	Description
Inquiry Learning Spaces in Go-Lab	Porto	14.02.2018	One day certified teacher training course, including the creation of an ILS.
Inquiry Learning Spaces in Go-Lab	Seia	28.04.2018	One day certified teacher training course, including the creation of an ILS.
An introduction to the Go-Lab Ecosystem : Go-Labz and Graasp	Porto	03.022018	Session dedicated to Go-Lab during the certified teacher training course "Teachers and students in the 21st century: learning by inquiry and interdisciplinarity".
An introduction to the Go-Lab	Évora	03.02.2018	Session dedicated to Go-Lab during the certified teacher training course "Teachers and students in the 21st

Title	Location	Date	Description
Ecosystem : Go-Labz and Graasp			century: learning by inquiry and interdisciplinarity".
An introduction to the Go-Lab Ecosystem : Go-Labz and Graasp	Sintra	17.02.2018	Session dedicated to Go-Lab during the certified teacher training course "Teachers and students in the 21st century: learning by inquiry and interdisciplinarity".
An introduction to the Go-Lab Ecosystem : Go-Labz and Graasp	Cascais	03.032018	Session dedicated to Go-Lab during the certified teacher training course "Teachers and students in the 21st century: learning by inquiry and interdisciplinarity".
An introduction to the Go-Lab Ecosystem : Go-Labz and Graasp	Algés	16.02.2018	Session dedicated to Go-Lab during the certified teacher training course "Teachers and students in the 21st century: learning by inquiry and interdisciplinarity".
An introduction to the Go-Lab Ecosystem : Go-Labz and Graasp	Oeiras	04.05.2018	Session dedicated to Go-Lab during the certified teacher training course "Teachers and students in the 21st century: learning by inquiry and interdisciplinarity".
Inquiry, interdisciplinarity and co-creation learning scenarios with Go-Lab	Guimarães	10.07.2018	Workshop during the conference "Science, Communication, Image and Technology" at Casa das Ciências.
Inquiry, interdisciplinarity and online laboratories in e-learning scenarios	Braga	04.07.2018	Workshop during the conference "Making Learning Meaningful: implications for teachers training", promoted by the NESTT project
An introduction to the Go-Lab Ecosystem : Go-Labz and Graasp	Malmo	22.05.2018	Session dedicated to Go-Lab within a teacher training workshop of the project PLATON
Developing Students 21st Century Skills with Go-Lab	Brussels	05.05.2018	Workshop within Scientix
Inquiry, Interdisciplinarity and Big Ideas of Science	Canary Islands	29.07-04.08.2018	Session dedicated to Go-Lab during the "Astronomy Adventures in Canary Islands"
An introduction to the Go-Lab Ecosystem : Go-Labz and Graasp	Vienna	16.08.2018	Session dedicated to Go-Lab during the international GTTP teacher training organized by G-HOU

Title	Location	Date	Description
Engaging with schools	Molėtai (Lithuania)	07.08.2018	A couple of sessions during the Europlanet Summer School 2018
Exploring Interdisciplinarity on Learning Using Online Labs	Vilnius (Lithuania)	08.07.208	Workshop at the University of Educational Sciences
Go-Lab Summer School	Marathon	08-13.08.2018	Summer School
Go-Lab – Structuring inquiry activities with online labs	Mitaka (Japan)	10.03.2018	Workshop

4.8 Target audience and impact

The teacher training courses were mainly for middle and secondary science school teachers but there were also non-science teachers and primary teachers.

4.9 Outcomes

All participants explored the Go-Lab portal, created an account in Graasp and learned the basics of Graasp. Teachers that had the 6 hours course managed to create an original ILS.

4.10 Related materials

Figure 22: Poster advertising a teacher training course

Figure 23: Teacher training in Rio Tinto

4.10 Website, Newsletter and Social Media

4.11 Website

The projects Next-Lab/Go-Lab appear in NUCLIO's website http://nuclio.org in the section of ongoing projects, with a description and a link to the official project site. We also announce the teacher training courses in our website.

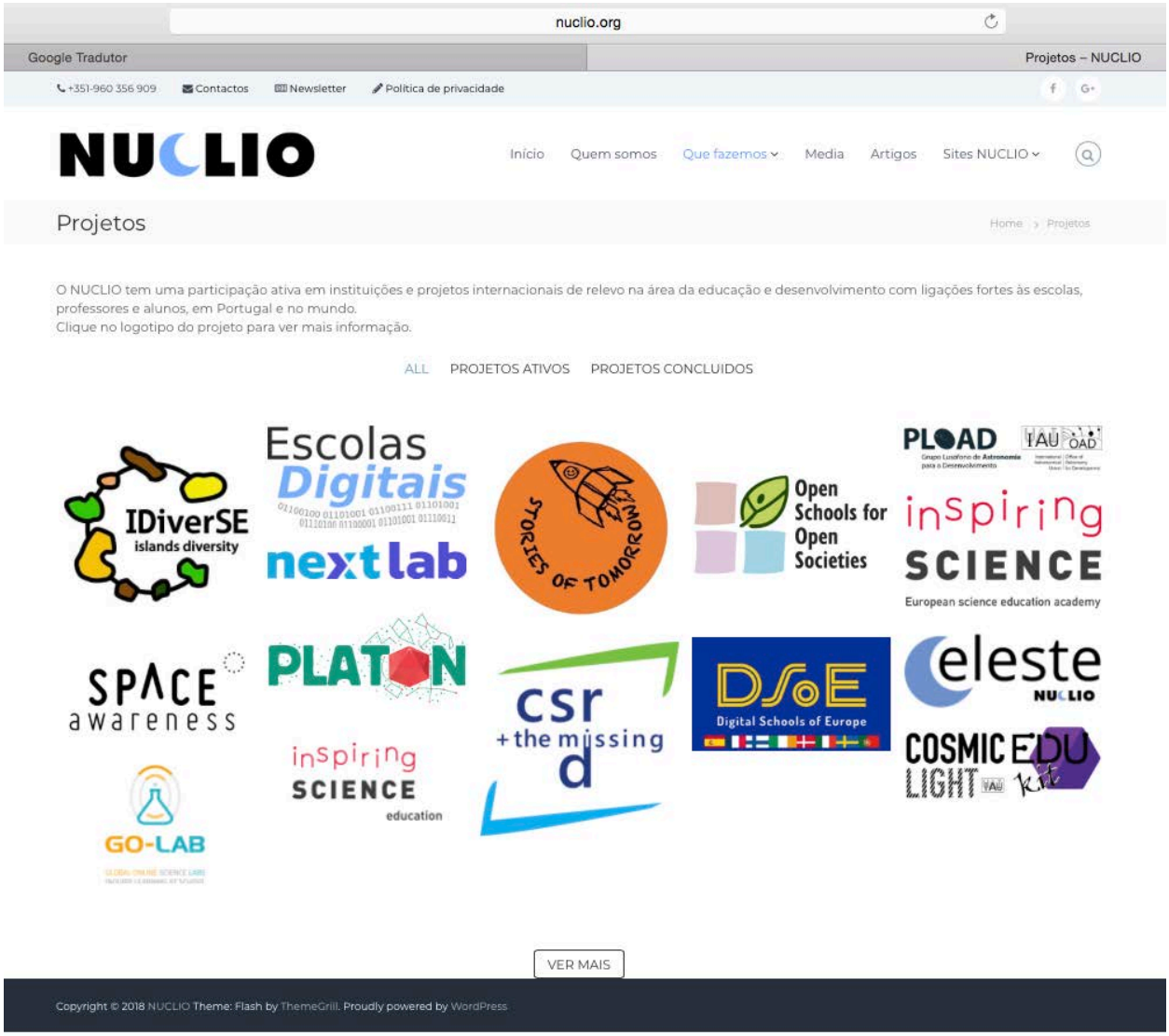


Figure 24: NUCLIO's website showing ongoing projects, including Next-Lab/Go-Lab.

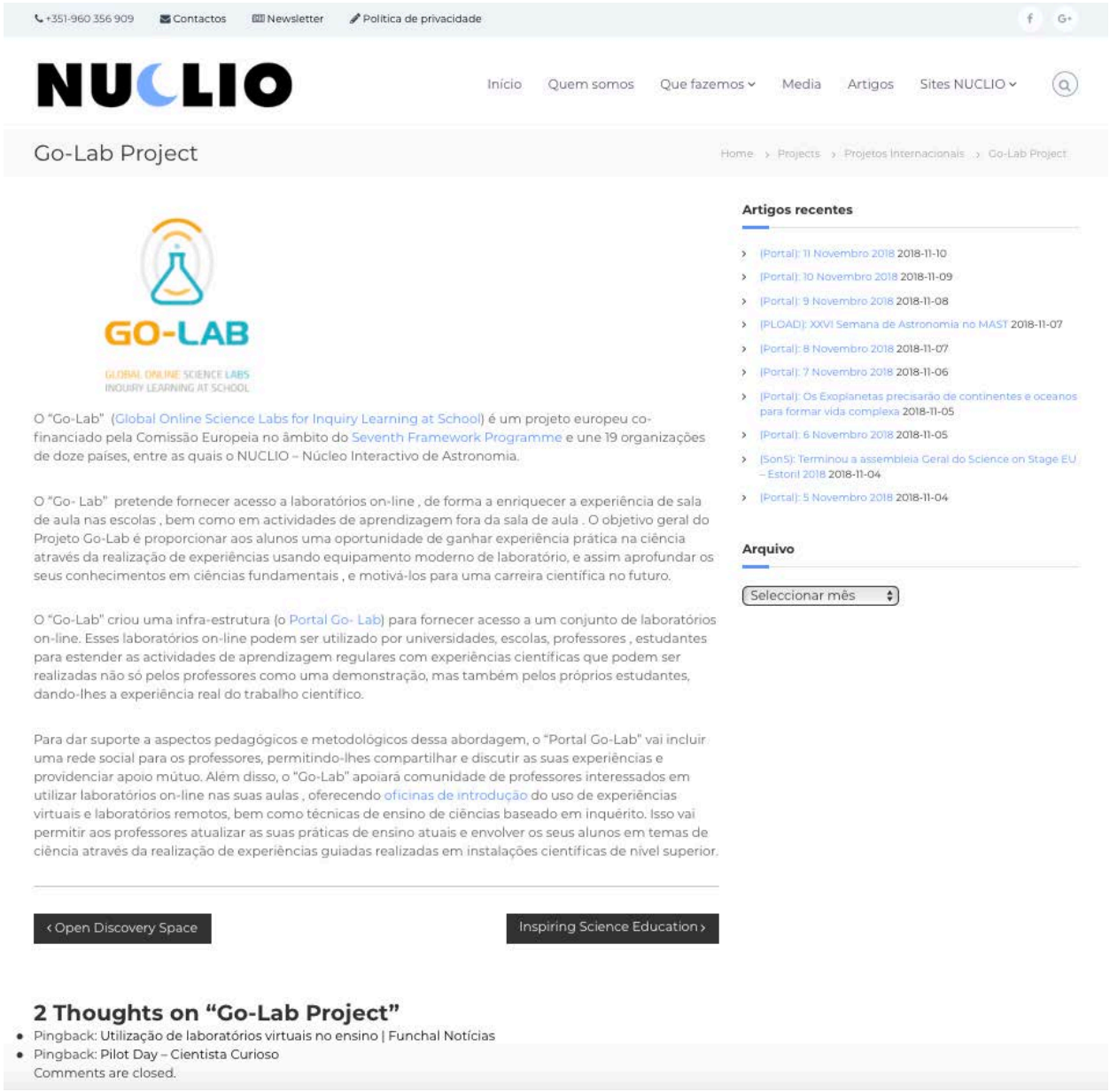


Figure 25: Information on Go-Lab project

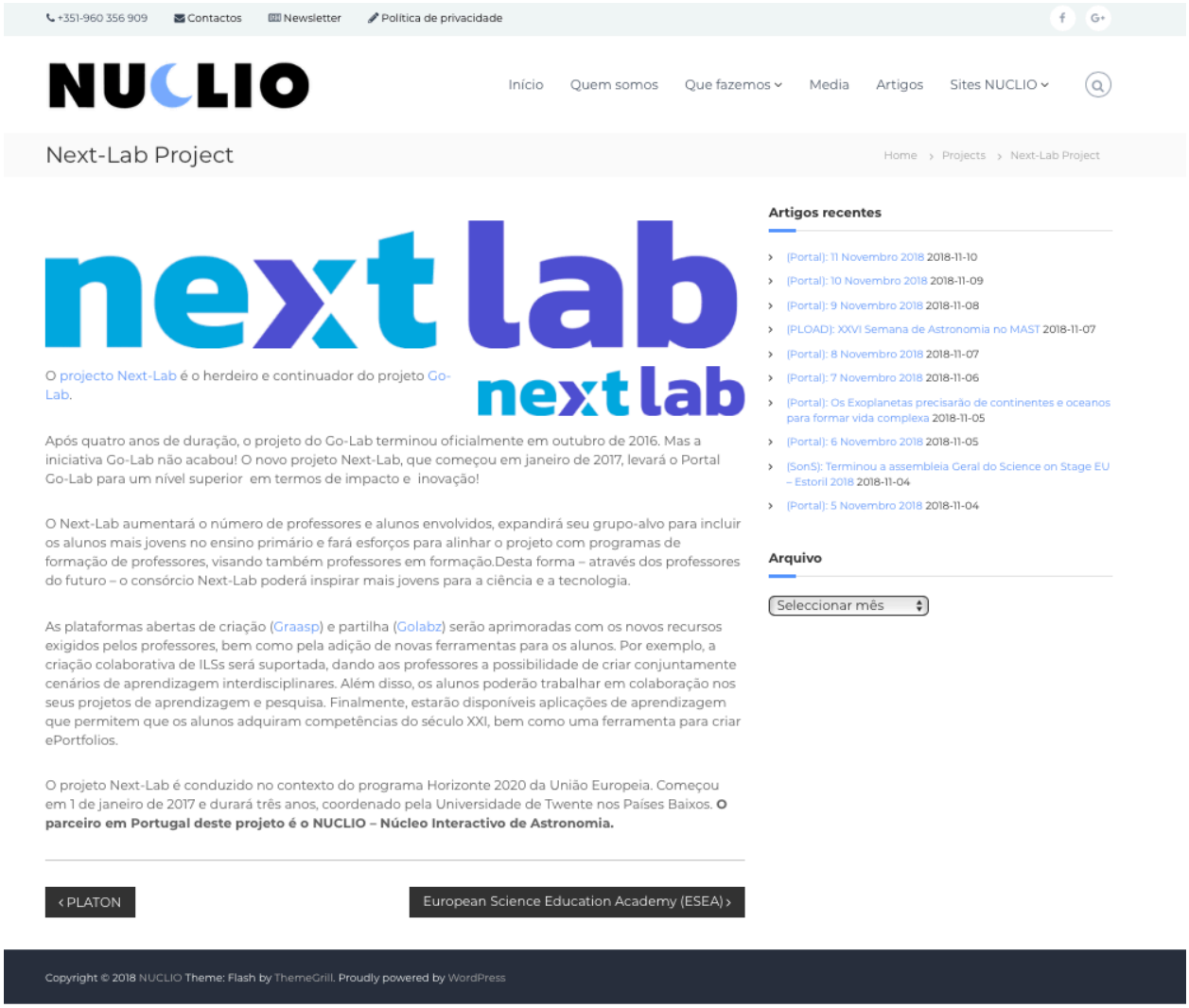


Figure 26: Information on Next-Lab project

4.12 Newsletter

NUCLIO has disseminated the Next-Lab project through its own newsletter, which is written in Portuguese and has 3000 subscribers from not only Portugal but also other Portuguese speaking countries.

NUCLIO has also disseminated the Next-Lab project through the Galileo Teacher Training Program newsletter, written in English and with almost 6000 subscribers from all over the world.

4.13 Social Media Channels

Facebook and Instagram are used to disseminate the Next-Lab project, including workshops and teacher training courses.

NUCLIO posts regularly the “Resource of the week” which is a resource from Go-Lab (ILS or Lab) that relates to the curriculum that teachers should be teaching at that time of the school year. Teachers that are looking for materials for their upcoming classes will have the right resource from Go-Lab to use the following week(s). It also started publishing regularly “Go-Lab tips” which are short pieces of information.

O #NUCLIO na Lituânia: seminário "Explorando a Interdisciplinaridade no Ensino Usando Laboratórios Online", por Rosa Doran. Universidade de Ciências da Educação, Vilnius, Lituânia. "Exploring Interdisciplinarity in Learning Using Online Labs" NUCLIO at University of Educational Sciences, Lithuania, with @rosa .doran

Photos shared by Renata Kondratavičienė e Romualda Lazauskaitė and edited by NUCLIO.
#golab #nextlab

Figure 27: Go-Lab on Instagram

Figure 28: Example of a "Resource of the week".

Figure 29: Example of a "Go-Lab Tips".

4.14 Dissemination Channels Figures

Twitter followers	Facebook fans	YouTube channels view	LinkedIn group members	Newsletter	Website unique visitors	Instagram
	5524			9000		

5. National dissemination and implementation report Greece

5.1 Dissemination Events

5.2 Summary of dissemination events

The dissemination strategy in Greece continues to be based on the general communication aims and objectives of the project but at the same time it is continuously adjusted to address the special circumstances of the educational, social and geographical needs and characteristics of the country, as described in the previous report.

To cope with two specific challenges, EA has organized and merged its dissemination efforts with other existing initiatives that target teachers in borderland and inaccessible regions (e.g. Scientix, STEMpowering Youth) as well as promoted and introduced the use of the Go-Lab Ecosystem and methodology through the presentation of attractive ILS and projects, linked to the specific curricula of specific subject domains, such as in the fields of environmental issues, astrophysics, etc.

This way, we hope to achieve and accomplish to satisfy the main goal, to maximize the outreach and increase the number of teachers and stakeholders that are aware of Go-Lab and are considering using it in their educational activities and to attend training and workshops offered by EA and/or the project. At the same time we hope to achieve a well-balanced audience as far as the social, economic and geographical conditions of the schools they represent.

Several dissemination channels and approaches are being used to reach and link to the Greek educational community. The main channels of communication are:

i. Individualized, personalized email to known, registered and active teachers who have the potential to act as multipliers of the project;

ii. Newsletters to teachers all over Europe, using the network and archive of Ellinogermaniki Agogi;

iii. Publication of invitations and announcement of events, workshops and Next-Lab training at the websites of 3rd parties;

iv. Publication of invitations and announcement of events, workshops and training at relevant groups of the social media (e.g. Facebook, Twitter, etc.)

In 2018 EA has accomplished 6 specific dissemination events in which around 850 teachers, educators and undergraduate students participated from all over the country and in Germany.

It should be noted that additionally at every training activity and workshops (reported under WP2), also dissemination material was distributed and handed out.

Table 22. Next-Lab Dissemination Events

Title	Location	Date	Description
The Society for STEM Education in Europe	Heraklion, Greece	15/2/208	Presentation of the Go-Lab Ecosystem to about 30 teachers
Distribution of ISE leaflets	Online	March 2018	The leaflets of the ISE Academy including the Go-Lab Summer school was distributed to the network of ca. 10.000 teachers
Presentation of Go-Lab at key note of the ISE Summer Schools	Marathon, Greece	6/7/2018	Key note presentation of Go-Lab to an audience of ca. 200 teachers
Poster session during ISE Summer Schools	Marathon, Greece	1-13/7/2018	Poster presentation of Go-Lab at the premises of the ISE Summer Academy, leaflets were included to

Title	Location	Date	Description
			the participants bags for more than 300 teachers
CREATIONS conference (poster, leaflets)	Pallini, Athens	2-3/11/2018	Ca. 150 people were attending the conference, Go-Lab was presented with a poster and leaflets that were part of the conference bags
Poster presentation at the MINT-EC network headmaster meeting in Hamburg (poster, leaflets)	Hamburg, Germany	2-3/11/2018	At the annual MINT-EC headmaster meeting of the STEM excellence schools of the network, Go-Lab was presented with a poster and leaflets

5.3 Target audience and impact

The main target audience were teachers and educators in STEM. However, there are intensified efforts to inform and disseminate material to university staff, teacher trainers and pre-service teachers. The total number of teachers is ca. 350, while another 150 stakeholders were present in conferences. Furthermore, there were about 350 persons in the MINT-EC meeting in Hamburg.

5.4 Website, Newsletter and Social Media

5.5 Website

A dedicated site for the Go-Lab Summer School has been created at http://golab.ea.gr that informs about the goals and objectives about the courses and offers also a description of the Go-Lab Ecosystem. The website is being distributed and promoted in the efforts to have teachers attend the Go-Lab training in Greece in 2019.

Figure 30

5.6 Newsletter

Go-Lab has been promoted and relevant training events announced in several newsletters as part of EA's efforts of the Inspiring Science Education Academy. The newsletter has been distributed to more than 10.000 teachers that are registered from all over Europe.

5.7 Dissemination Channels Figures

Twitter followers	Facebook fans	YouTube channels view	LinkedIn group members	Newsletter	Website unique visitors	Instagram
-	-	-	-	10.000	-	-

6. National dissemination and implementation report The Netherlands

6.1 Dissemination Events

6.2 Summary of dissemination events

In the table below a summary is given of the dissemination events in the Netherlands.

Table 23. Next-Lab Dissemination Events

Title	Location	Date	Description
Onderzoekend leren met online laboratoria	Enschede	24-01-2018	Key note presentation of a conference for secondary school teachers "Twents meesterschap"
21e eeuwse vaardigheden en	Veldhoven	25-01-2018	Workshop on a conference about math for primary school teachers

Title	Location	Date	Description
wiskunde: een goede combinatie			
Course Innovative Technology-Based Learning Environments	Enschede	06-02 till 04-04-2018	Course consisting of seven 1,5 hour sessions
Go-Lab	Garderen	08-02-2018	Workshop on a conference for secondary school teachers "*NLT, met de T van technologie*"
CEPHEI meeting	Enschede	14-05-2018	Presentation at a meeting of an Erasmus+ project aimed on scaling e-learning and blended learning
Onderzoekend leren van wiskunde met online labs	-	30-05-2018	Article in "Volgens Bartjens", a Dutch magazine for pre- and in-service primary school teachers, as well as teacher trainers
Leren onderzoeken met digitale labs	Zeist	03-11-2018	Workshop on a conference for secondary chemistry teachers "Woudschoten Chemie Conferentie"

6.3 Target audience and impact

The Dutch dissemination strategy focuses on reaching new groups of users by means of workshops in combination with a first training in using Graasp on teacher conferences and other events where teachers meet. The main target audience were secondary teachers in STEM subjects, especially chemistry, physics and NLT (Nature, Life and Technology), primary school teachers and pre-service teachers. The Course Innovative Technology-Based Learning Environments consists of several meetings (see Implementation activities). Another target group was researchers and teachers in higher education.

6.4 Outcomes

In total more than 300 teachers were reached by the dissemination activities. Since the beginning of the year about 200 new Graasp users were registered.

6.5 Related materials

Figure 31: pictures of a presentation at the Twents Meesterschap conference.

NLT, met de T van technologie

NLT-Conferentie 2018

Op **8 februari 2018** was de 11de NLT Conferentie met als thema *NLT, met de T van technologie.* De conferentie werd georganiseerd door Vereniging NLT in samenwerking met NVON, SLO en de NLT-vaksteunpunten.

Het programma bestond dit jaar uit twee lezingen en drie werkgroepronden (pdf) . Deelneemrs hebben per mail een certificaat toegezonden gekregen.

Hieronder staan de presentaties van deze dag.

Hoofdlezing door **Petra Heesterbeek**
Titel: **Medische technologie in de mens: onderzoek naar knieprotheses**

Slotlezing/demonstratie door **Rolf Hut.**
Titel: **Maak het met nlt**

Katernen nlt-didactiek, uitgave ter gelegenheid van NLT-Conferentie 2018

Werkgroepronde 1

- Leerlingen & NLT (Nelleke den Braber)
- Go Lab (Henny Leemkuil)
- Robots programmeren met Lego Mindstorm (Rachel Crane)
- Technisch ontwerpen in de BMT (Edgar de Wit)
- NLT in de onderbouw (Arjan Boer en Wim Sonneveld)
- Nlt voor de havo-leerling (Baukje Lobregt)
- De didactiek van het ontwerpen in nlt (Marc de Vries)
- Engineering in nlt (Guido Linssen)

Figure 32: A part of the website of the NLT conference.

6.6 Implementation Activities

6.7 Summary of implementation activities

The main training activity is the course “Innovative Technology-Based Learning Environments” which consists of seven sessions of 1,5 hours. In the first part of these sessions information is given about topics like inquiry learning, Graasp, the use of videos,

cognitive load etc. In the second part the participants work in groups on their own ILS. In total 38 participants joined the course this year.

Furthermore there were several small workshops at teacher conferences. See previous chapter.

6.8 Target audience and impact

The main target audience were secondary teachers in STEM subjects, especially chemistry, physics and NLT (Nature, Life and Technology), primary school teachers and pre-service teachers. Another target group was master students in Educational Science and Technology.

6.9 Outcomes

In the elaborate course ten ILSs have been developed and tested with students of the target groups. Four of these are published on Golabz.

1: Tragedy of the Commons (Economy), 4 VWO - pre-university education

https://www.golabz.eu/ils/leeromgeving-de-meent

2: Electrical circuits, grade 5 primary school

https://www.golabz.eu/ils/elektriciteit

3: Sinking and floating, grade 3 primary school

https://www.golabz.eu/ils/drijven-en-zinken-groep-5-6

4: Plant growth, grade 5 and 6 of the International School of Twente

http://graasp.eu/ils/5a9529cc45aca55d331981e3/?lang=en

5: Gears, AOC Oost students

http://graasp.eu/ils/5abb733245aca55d336c61da/?lang=nl

6: Using measurement instruments in electrical circuits, 3 VWO – pre-university education

http://graasp.eu/ils/5ab8b30d45aca55d3313a0ef/?lang=nl

7: Balancing, grade 6 primary school

http://graasp.eu/ils/5a8307fb079c362f6685592a/?lang=en

8: Fractions, grade 5 primary school

https://www.golabz.eu/ils/oefenen-met-breuken

9: The relation between distance, rate, and time, grade 4 Chinese elementary school students

http://graasp.eu/ils/5ab01ad645aca55d33319ad2/?lang=en

10: Introduction to Waves, 1st year Bachelor students Applied Physics UT

http://graasp.eu/ils/5a8308e5079c362f668578cb/?lang=en

6.10 Related materials

Figure 33: Two impressions of ILSs published on Golabz.eu.

6.11 Website, Newsletter and Social Media

We don't use specific social media aiming at the Dutch audience.

7. National dissemination and implementation report United Kingdom

7.1 Dissemination Events

7.2 Summary of dissemination events

The Leicester events in 2018 usually combined dissemination and implementation as we not only presented Next-Lab but also actively involved the participants through hands-on or evaluation activities. The proportion of each was determined based on the project needs.

For instance, some events included participatory design tasks to gather input from experienced teachers in regards to Go-Lab services and artefacts, while hands-on activities were targeted at new users to give them a first impression of the Go-Lab Ecosystem.

Table 24. Next-Lab Dissemination Events

Title	Location	Date	Description
Participatory Design session with ambassadors	Brussels	09/12/2017	Next-Lab PD workshop as part of the 18th Science Projects Workshop in the Future Classroom Lab.
Science Teachmeet – Technology in the Science classroom	Leicester	08/02/2018	Planned PD workshop as part of a Science Teachmeet organized by the Leicester TTI partner Jon Heywood. Unfortunately, had to be cancelled due to low number of teachers signing up.
Participatory Design session as part of the Spring School	Bilbao	25/04/2018	Participatory Design Workshop "Co-Creation" as part of the Spring School 2018.
Follow-up to the twilight event at Brookvale Groby Learning Campus.	Leicester	18/06/2018	Planned session with participants of the initial twilight event to review how they used the Go-Lab resources. Unfortunately, it had to be cancelled because the organizer from the school side was on maternity leave and could not be replaced.
Next-Lab introduction at Uppingham school	Uppingham	09/11/2018	Presentation of Next-Lab project and Go-Lab resources for science teachers.
Next-Lab workshop as part of the Midlands Consortium meeting	Leicester	20/11/2018	Presentation of and hands-on activities with the Next-Lab project and Go-Lab resources for TTI representatives. Organized by the Leicester TTI partner Jon Heywood as part of the Midlands Consortium meeting.

7.3 Target audience and impact

The target audience for these dissemination and implementation activities were primarily in-service teachers, heads of science, and teacher trainers. For the events organized in the UK, participants had none or very little prior knowledge about Next-Lab, whereas participants of international events were usually experienced with the use of the Go-Lab Ecosystem.

Impact happened in two ways: 1) by collecting participants' input with PD activities, they could support the project by shaping the visual and interaction design of apps and other Go-Lab resources, and 2) through a multiplier effect, the teachers and teacher trainers exposed to the Go-Lab Ecosystem can now spread the word to other colleagues.

7.4 Outcomes

To avoid repetition, the outcome of the PD activities are not reported here, instead they can be found in detail on deliverable 4.3.

Follow-up activities and collaborations with teachers participating in the events presented here have not happened yet, but are under discussion.

7.5 Related materials

The related materials (e.g. slides) can be found in the respective events in the Go-Lab community in Graasp.

Figure 34. Screenshot of one of the UK event spaces in the Go-Lab Community

7.6 Website, Newsletter and Social Media

7.7 Website

A link to the Next-Lab project website can be found at:

https://www2.le.ac.uk/departments/informatics/research/projects

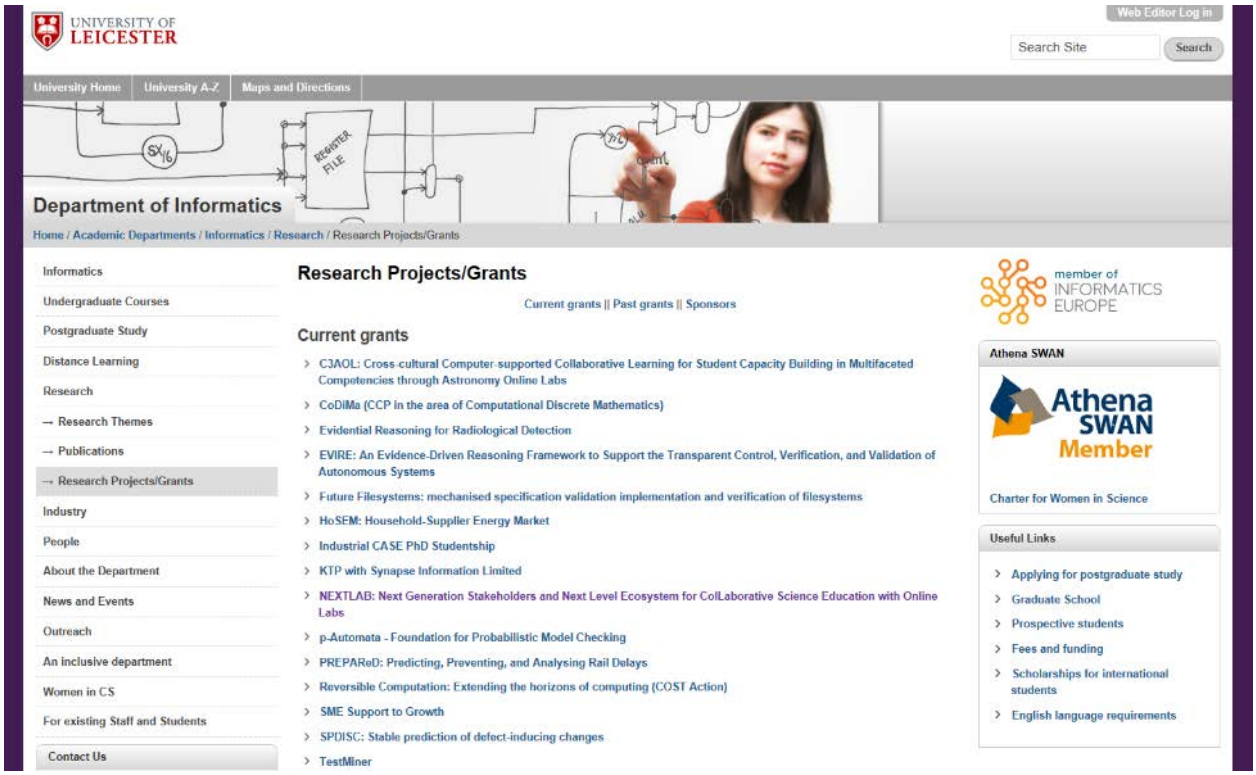


Figure 35: Website screenshot

Offer for school activities on the Informatics department website is kept available at:

https://www2.le.ac.uk/departments/informatics/outreach

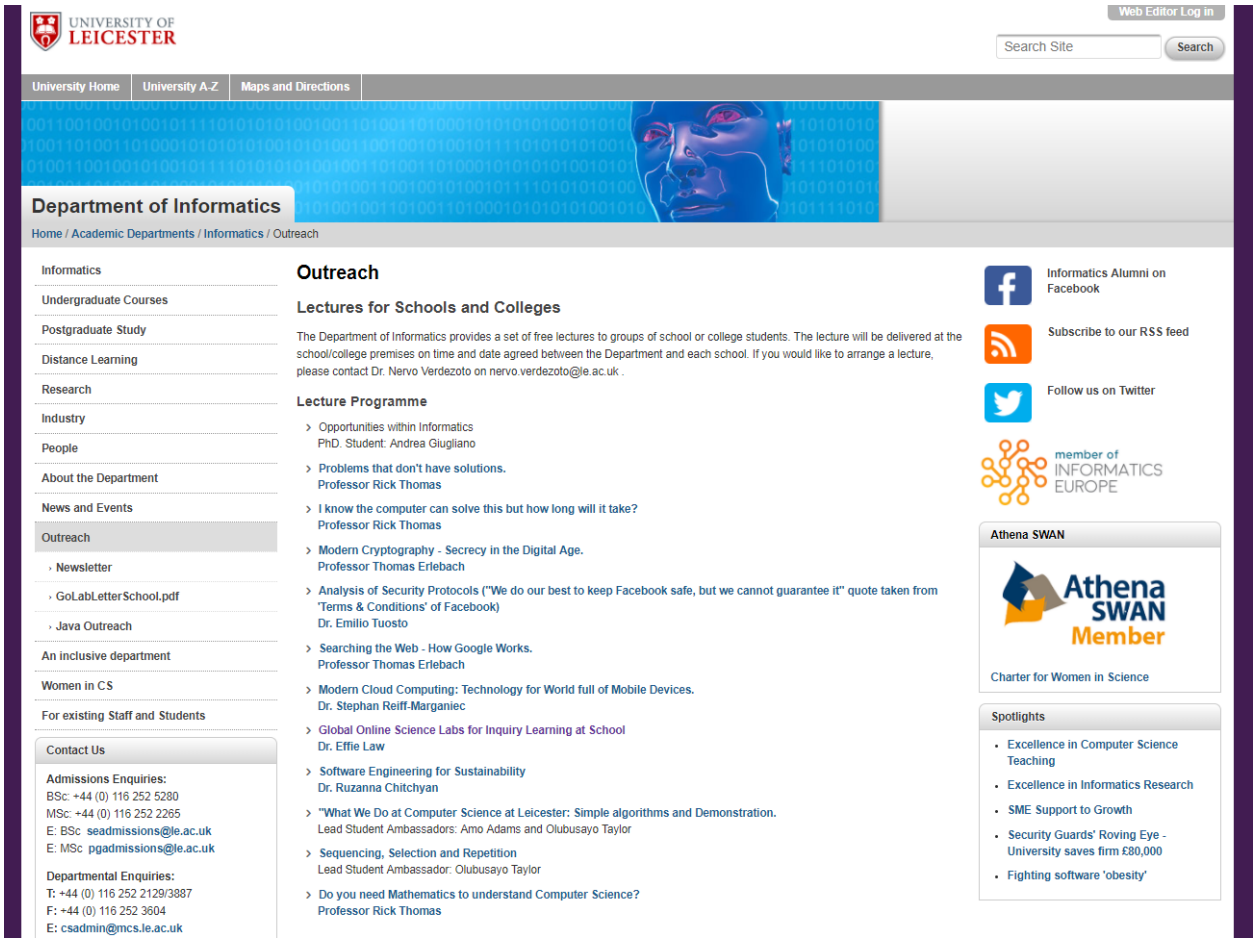


Figure 36: Website screenshot

8. National dissemination and implementation report Estonia

8.1 Dissemination Events

8.2 Summary of dissemination events

In the 2nd year of the project four dissemination events led by the University of Tartu introducing the Go-Lab Ecosystem to a wider audience have been materialised. Three of the events were international dissemination events and one was a national event.

Table 25: Next-Lab Dissemination Events

Title	Location	Date	Description
Õpime nutikalt bioloogiat	Tartu	17.02.2018	Go-Lab workshop for about 30 biology school teachers during a biology teacher association winter school meeting.
The Go-Lab Ecosystem	Riga, Latvia	11.05.2018	Introduced Go-Lab to university distance learning researchers at Riga Technical University during a 3 hour presentation and hands-on workshop (about 10 participants).

Title	Location	Date	Description
Learning in online science laboratories: perspectives, challenges and opportunities	Taipei, Taiwan	21.-22.05.2018	Seminar for about 15 participants from National Taiwan Normal University (NTNU) and a workshop for about 20 local Taiwanese school teachers hosted by NTNU.
Supporting collaborative inquiry learning for students using simulations and chat messaging	Jerusalem, Israel	10.10.2018	EARLI SIG 20 conference meeting presentation to an audience of about 15 participants.

8.3 Target audience and impact

The target audience for the Tartu event was biology school teachers attending their biology teacher association's winter school. The participants were provided with a workshop in the computer lab where they were introduced to Go-Lab and learnt to create content in Graasp by following instructor-led demonstrations. The target audience for the event in Riga, Latvia was university professionals at Riga Technical University who had experience using distance education methods to train school teachers. This event included a 3 hour presentation and hands-on workshop for about 10 participants to learn the Go-Lab Ecosystem. The target audience for the Taiwan seminar event were teacher educators and researchers at National Taiwan Normal University (NTNU), while the target audience for the Taiwan workshop event were local school teachers in Taipei. Both of these events were done as part of an Erasmus+ staff mobility visit of 3 Estonian university persons to Taiwan. The target audience for the EARLI SIG 20 conference meeting was educational researchers. The result was a presentation to about 15 participants about supporting collaborative inquiry learning for students using simulations and chat messaging.

8.4 Outcomes

All participants for the workshop events were able to create their own inquiry learning spaces and navigate the Graasp authoring environment by the conclusion of the workshop.

Our initial contact with NTNU in 2017 and follow up meeting in 2018 has helped the Taiwanese science education research team find co-financing from their national agency in order to become associated with the Next-Lab project.

8.5 Related materials

Figure 37: Presentation at the EARLI SIG 20 meeting on October 10, 2018 about supporting collaborative inquiry learning for students using simulations and chat messaging in the Go-Lab learning environment.

8.6 Implementation Activities

8.7 Summary of implementation activities

In the second year of Next-Lab we have implemented five teacher training activities. Four were workshops that were part of in-service teacher training and one was a course for in-service teachers. The four workshops were actually two double sessions. We have found that it is most effective during the first session to introduce inquiry-based learning and the Go-Lab Ecosystem to in-service teachers. Then, as a homework assignment, teachers create their own ILS and implement it with their students. When these teachers return for the second session they are asked to present the ILS they created and discuss their experience using it with students. By sharing and reflecting on these experiences we aim to help the teachers learn from each other and feel confident in using Go-Lab inquiry learning activities with their students in the future.

Table 26: Next-Lab implementations

Title	Location	Date	Description
Workshop for teachers	Tartu	18.01.2018	1 day professional development course for 24 Estonian in-service primary and secondary school teachers.
Preservice teacher education course	Tartu	12.02.2018	Start of the pre-service teacher education course SVHI.06.003 Inquiry Learning at the University of Tartu (22 registered students).
Workshop for teachers	Tartu	16.02.2018	1 day professional development course for 24 Estonian in-service primary and secondary school teachers.
Workshop for teachers	Tartu	20.04.2018	1 day professional development course for 20 Estonian in-service primary and secondary school teachers.
Workshop for teachers	Tartu	18.05.2018	1 day professional development course for 19 Estonian in-service primary and secondary school teachers.
Preservice teacher education course	Tartu	22.08.2018	Start of the pre-service teacher education course SVHI.06.004 Using Innovative Technologies that Support Inquiry Learning at the University of Tartu (16 registered students).

8.8 Target audience and impact

The target audience for the four workshops was in-service teachers who were provided with the foundations to create inquiry content in Go-Lab. The target audience for the two education courses was preservice teachers who are learning about educational theories and how to apply them in classroom practice at the University of Tartu. The content university students have to create in Go-Lab should reflect their understanding of how to best apply inquiry learning principles in a practical lesson.

8.9 Outcomes

The course SVHI.06.004 requires participants, as a homework assignment, to create a web-based inquiry task in the Graasp environment, submit it for student peer review, give reviews and feedback to other students and finally revise the inquiry task based on the received feedback. As a result, we are able to collect new student-generated inquiry learning materials that if suitable, can be adapted and published to the GoLabz repository.

8.10 Related materials

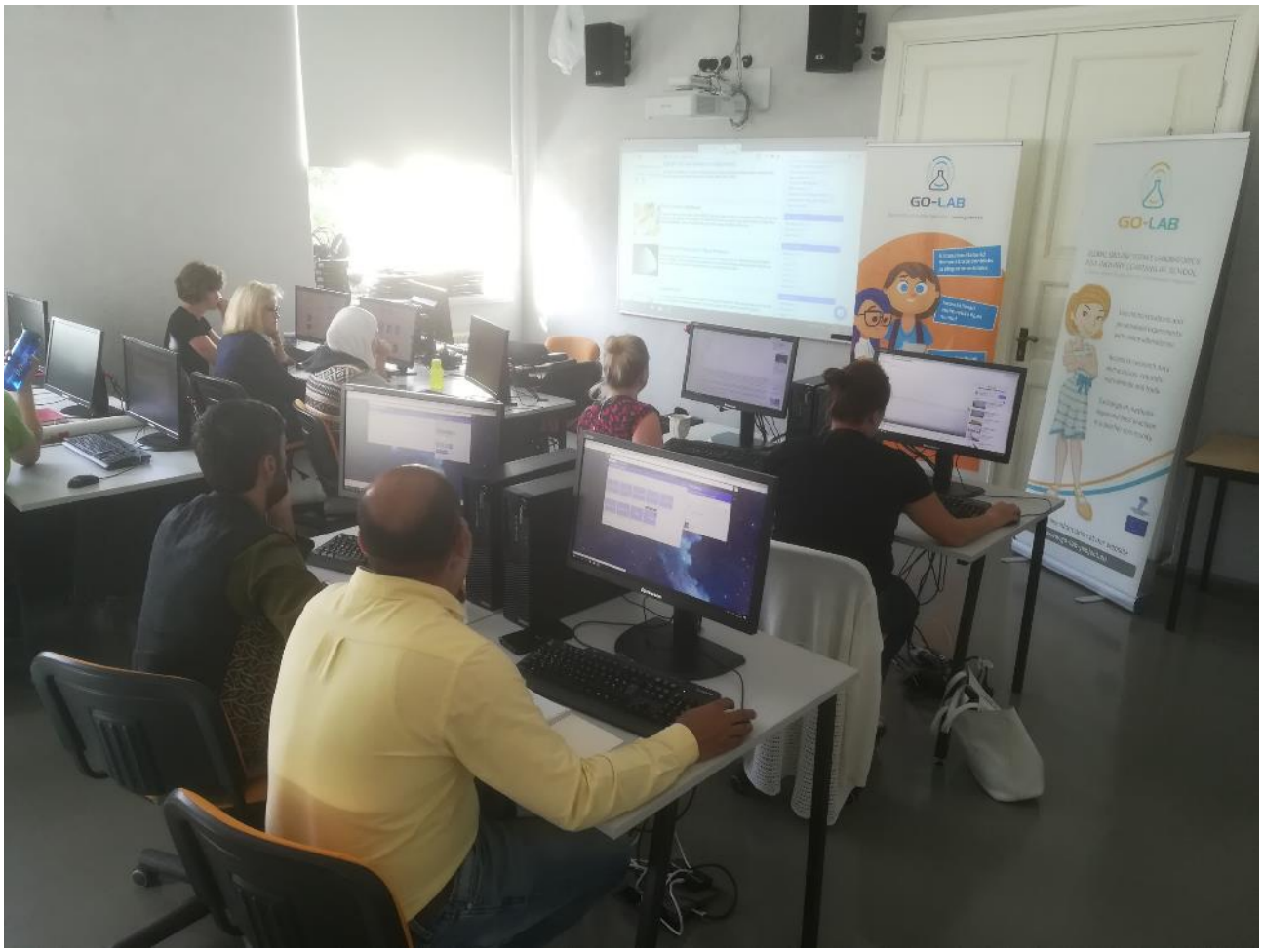


Figure 38: International Master's students at the University of Tartu on August 22, 2018 learning the Go-Lab Ecosystem as part of the course SVHI.06.004 Using Innovative Technologies that Support Inquiry Learning.

8.11 Website, Newsletter and Social Media

8.12 Website

In addition to the University of Tartu's Centre for Educational Technology research group website (https://www.ht.ut.ee/en/haridustehnoloogia-keskus), where a description of the Next-Lab project and people involved with this project are provided, two major events in 2018 were described on the university's Institute of Education website. The first event was the Next-Lab Spring School in Bilbao, Spain, where two researchers from UTE and three teachers in Estonia attended and co-created Go-Lab learning materials. The link to the news item is available at https://www.ht.ut.ee/et/uudised/tartu-haridusteadlased-osalevad-uurimusliku-oppe-suurprojekti-kevadkoolis. The description of the Spring School event also highlighted opportunities Estonian teachers had to interact with teachers around Europe. The second event posted on the Institute of Education webpage was an Erasmus+ mobility visit to Taiwan, where 3 researchers from UTE introduced inquiry-based science education in the Go-Lab environment to participants from National Taiwan Normal University, as well

as local teachers in Taipei (https://www.ht.ut.ee/et/uudised/tartu-haridusteadlased-loovad-koostookontakte-taiwanis).

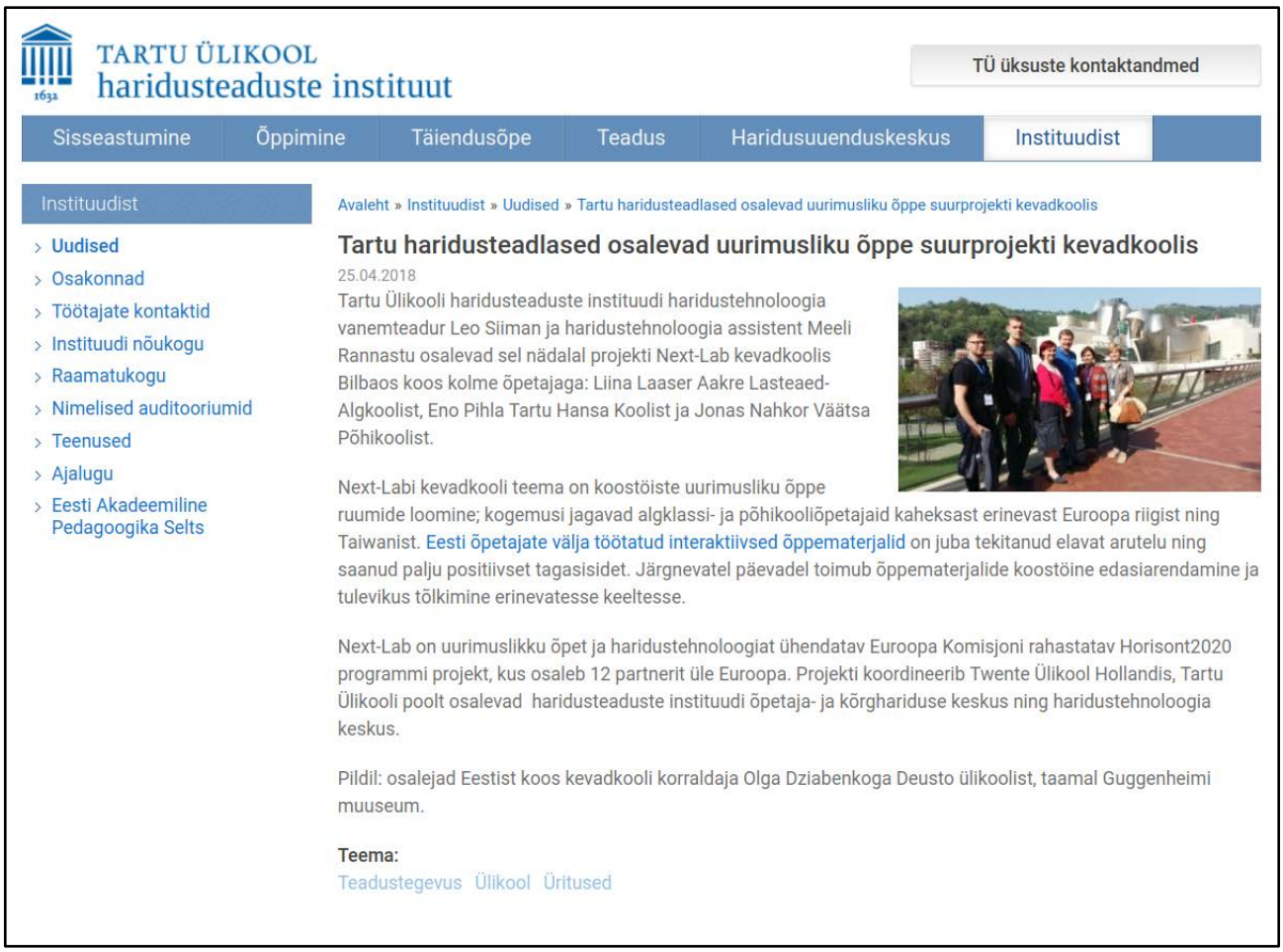


Figure 39: Screenshot from the University of Tartu's Institute of Education webpage showing the news item that researchers and Estonian teachers travelled to Bilbao, Spain to work together on co-creating learning materials in the Go-Lab environment and sharing their results with other researcher and teachers from the other European project partner countries.

9. National dissemination and implementation report Cyprus

9.1 Dissemination Events

9.2 Summary of dissemination events

During the 2nd year of the Next-Lab project, five dissemination events were carried out in Cyprus, as shown in Table 27 below. Four out of five events targeted students and one in-service secondary teachers. The first three events had the same overall structure and were organized in the context of primary school conferences. The topic of these conferences was related to the use of new and innovative technological tools in schools and members of the NEC in Cyprus were invited to visit the schools and implement an ILS (for approximately 80 minutes with 8 different classes, in total). The ILS was about craters on earth and students worked in small groups to complete the activities of the ILS with the support of the instructors. The fourth event was organized in collaboration with the Ministry of Education

and the SEMEP (South-Eastern Mediterranean sea Project) coordinator in Cyprus. During this event, Go-Lab was introduced as a tool to enhance the acquisition of inquiry skills in Ecology education. The event was initially planned as a training workshop, however, due to other limitations, the Go-Lab session lasted for only fifteen minutes. At the end of the brief presentation, participants were invited to join the Go-Lab community and the NEC offered contact information for future collaborations and trainings regarding Go-Lab. The last event was organized by the University of Cyprus. Secondary school students visited the University to get informed about the different departments of the University and meet scientists that work in research projects. The NEC in Cyprus represented the Department of Education of the University of Cyprus and, among other topics, presented the Next-Lab project and students had the opportunity to visit the Go-Lab Sharing Platform and try some online labs and ILSs, with the support of the instructors.

Table 27. Next-Lab Dissemination Events

Title	Location	Date	Description
Investigating asteroids fall on earth using a virtual lab	Larnaca, Cyprus	14/02/2018	An ILS was implemented in a public primary school. Students (45) and their teachers (3) participated in this event in the context of a workshop that has been organized by their school. The workshop focused on the use of new and innovative technologies in education. During the event, the students had the opportunity to try an ILS prepared for the purposes of the event. Specifically, the students worked in groups of two and completed the activities with emphasis on the virtual lab.
Investigating asteroids fall on earth using a virtual lab	Larnaca, Cyprus	27/02/2018	An ILS was implemented in a public primary school. Students (60) and their teachers (3) participated in this event in the context of a workshop that has been organized by their school. The workshop focused on the use of new and innovative technologies in education. During the event, the students had the opportunity to try an ILS prepared for the purposes of the event. Specifically, the students worked in groups of fours and completed the activities with emphasis on the virtual lab.
Investigating asteroids fall on earth using a virtual lab	Nicosia, Cyprus	07/05/2018	Implementation of an ILS in a public primary school. Students (50) and their teachers (4 teachers) participated in a workshop that has been organized by their school in which they had the opportunity to try

Title	Location	Date	Description
			an ILS prepared for the purposes of the event. The students worked in small groups (2-4 members) and completed the activities of the ILS.
The Go-Lab as an educational tool for inquiry learning in Ecology	Nicosia, Cyprus	23/10/2018	The event was organized in the context of the SEMEP project in collaboration with the SEMEP project coordinator in Cyprus and the Ministry of Education. During the event, participants (15 in-service Biologists) were introduce to Go-Lab Ecosystem with emphasis on the available apps that can support the acquisition of inquiry skills.
My e-class: Innovative technological tools in Learning in Natural Sciences	Nicosia, Cyprus	29/11/2018	During this event 20 secondary students visited the University of Cyprus to meet scientist from different departments and get informed about their work. The Department of Education was represented by our research group (Research in Science and Technology Education Group) and, among other topics, the students were introduced to the Go-Lab Sharing Platform and they tried some online labs with the support of the instructors.

9.3 Target audience and impact

The second-year dissemination events in Cyprus targeted mainly primary schools and included classroom implementations. These were invited events and they can be considered as a result of the strong network that ReSciTEG group (the NEC in Cyprus) has built with schools and teachers in Cyprus. During the implementations, students and their teachers had discussed about their experiences, what they liked the most and least concerning the Go-Lab learning environment and if they would like to have more Go-Lab experiences in the future. The co-organized event for the secondary teachers about Ecology Education was also a result of the good collaboration that ReSciTEG maintains with the Ministry of Education. Moreover, the two parties are already discussing about future events and training workshops.

9.4 Outcomes

All students who interacted with the Go-Lab Ecosystem during the dissemination events expressed positive comments and enthusiasm, while their teachers acknowledged the quality of the ILS that was used, and they liked the most that all students were active during the completion of the activity sequence. However, the main concerns remained the same as in the year 1 report, and they referred to the lack of time for extensive training on how to use Go-Lab in science teaching, the lack of the appropriate infrastructure in their schools and that the science curriculum is very demanding, and they don't have the flexibility to include new things in their daily practice. Regarding the interaction with the Biologists who

attended the co-organized event with the SEMEP project and the Ministry of Education, the time was very short, and no discussion was made about the possibilities of using Go-Lab to enhance inquiry skills when students design and execute investigations on an ecology related topic. In general, the teachers appreciated the Go-Lab and its tools and some of them were willing to get more training and use it in their biology classes. However, their main concern was that they did not have enough computers in the biology lab of their school (usually one and rarely up to three). Then the discussion was about using tablets or smart phones to complete activities supported by the Go-Lab Ecosystem and they agreed that this is something feasible if there was a good internet connectivity. At the end of the event, the SEMEP project coordinator expressed his willingness to continue the collaboration with the NEC in Cyprus and he suggested the organization of small-groups training workshops at the schools that are participating in the SEMEP project. As a result of these workshops the teachers will be able to create their own or adapt existing ILSs, to combine them with the field studies that they were expected to do until the end of the current school year, in the context of the SEMEP project. The extension of this collaboration is still in progress and a concrete schedule is yet to be agreed.

9.5 Related materials

For the classroom implementations students worked in small groups (see Figure 1) to complete the activities of the ILS about the craters on earth. The ILS was organized around the basic inquiry cycle scenario and the aim of the lesson was the study of the variables that might affect the size of a crater formed when an asteroid crashes to the earth (see https://goo.gl/eTzQey). At the end of each event, the Go-Lab leaflet was disseminated among the teachers and the school administrator was informed about the workshop activities and the Go-Lab Ecosystem (10 – 15 minutes brief discussion).

9.6 Implementation Activities

9.7 Summary of implementation activities

The training workshops organized by the NEC in Cyprus during the second year of the project were in total 8 and they are presented in the Table 28. They can be categorized based on the target group and the topics that had been covered (extended workshops vs short workshops). Specifically, two events targeted in-service Chemists, one of them was extended, meaning that it lasted more than two hours and the other was short, meaning that it lasted less than two hours. Two short trainings targeted in-service STEM teachers in the context of their mandatory Professional Development, as this is set by the Ministry of Education, one short training targeted both primary and secondary in-service teachers, two extended workshops were conducted in the context of two undergraduate courses at the Department of Education (Computer Science Applications in the Teaching of Science in Elementary School and The teaching of Natural Sciences), meaning they targeted pre-service teachers and one extended training was conducted in Finland as part of a collaboration between the ReSciTEG group and the University of Jyväskylä. Participants in this event were master students at the Department of Education at the University of Jyväskylä.

The content of the short trainings was a brief introduction to the Next-Lab project, demonstration of the Go-Lab Sharing platform with hands on activities and dissemination of support materials on how to use the Graasp authoring environment. The extended trainings were similar with the short ones with the difference that there was enough time for an extended training on how to use Graasp. Moreover, in some cases (e.g. undergraduate

courses) participants created their own ILSs, from which some of them were published on Go-Lab platform.

Table 28. Next-Lab Dissemination Events

Title	Location	Date	Description
The use of Go-Lab in Chemistry	Limassol, Cyprus	01/12/2017 and 08/12/2017	The Go-Lab Ecosystem was introduced as a powerful tool for the use and the creation of innovative inquiry learning environments in Chemistry. The participants (13 Chemists) were trained on how to search for online labs and inquiry spaces and how to use them or create their own ILS in Graasp.
Go-Lab: A portal for searching online labs and online lessons for Science Education	Nicosia, Cyprus	02/12/2017	The Go-Lab Ecosystem was introduced as a powerful tool for searching online labs and innovative inquiry learning environments in Science Education. The participants (16 primary and secondary teachers) were trained on how to search for online labs and inquiry spaces. In addition, they became members of the Go-Lab community and they were provided with a brief user manual on how to create their own ILSs.
Undergraduate course: Computer Science Applications in the Teaching of Science in Elementary School	Nicosia, Cyprus	16/01/2018, 23/01/2018 and 30/01/2018	Undergraduate students (prospective primary teachers) at the Department of Education at the University of Cyprus participated in 3-day training workshop, as part of their course titled "Computer Science Applications in the Teaching of Science in Elementary School". After the training workshop, students received support from the instructors in order to create their own ILSs.
Undergraduate course: The teaching of Natural Sciences	Nicosia, Cyprus	17/01/2018, 25/01/2018, 29/01/2018 and 31/01/2018	Undergraduate students (prospective primary teachers) at the Department of Education at the University of Cyprus participated in a 4-day training workshop, as part of their course titled "The teaching of Natural Sciences". After the training workshop, students received support from the instructors in order to create their own ILSs. In addition, participants implemented their own ILSs with a small number of students, as part of their course obligations.

Title	Location	Date	Description
The use of Go-Lab in STEM education	Larnaca, Cyprus	14/03/2018	The Go-Lab Ecosystem was introduced as a powerful tool in STEM education. The participants (11 in service secondary teachers) were trained on how to search for online labs, apps and inquiry spaces. At the end, they were provided with a brief user manual on how to create their own ILSs.
Innovative learning technologies and virtual labs	Limassol, Cyprus	24/03/2018	The workshop was offered twice during the Third Annual Chemistry Conference in Limassol, Cyprus. The conference was co-organized by Cyprus Pedagogical Institute, Cyprus University of Technology, University of Cyprus and Cyprus Chemistry Teachers Society. The duration of each workshop was 1 hour. During the workshop participants (40 in-service and pre-service Chemists) were introduced to the Go-Lab Ecosystem after they worked with an example ILS and they were given valuable information and helpful material on how to start using it.
Go-Lab: A platform for searching and creating Inquiry Learning Spaces for science education	Nicosia, Cyprus	10/10/2018	The training workshop was included in the context of a mandatory professional development program for secondary in-service teachers, which was offered by the University of Cyprus. During the workshop participants (23 STEM teachers) were introduced to the Go-Lab Ecosystem, they worked with an ILS as learners and they were provided with information and printed materials on how to start using it.
Go-LabEcosystem : The Go-Lab Sharing and Authoring Platform	Jyväskylä, Finland	09/11/2018	The workshop was organized after an invitation received from the University of Jyväskylä. Participants (15 master students – prospective primary teachers) were introduced to the Go-Lab Ecosystem and were trained on how to use Graasp to create their own ILSs.

9.8 Target audience and impact

The above training workshops have involved both in-service primary and secondary teachers and pre-service teachers for primary education. The general aim of the NEC in Cyprus was to introduce Go-Lab to as many teachers as possible so that to increase the possibility for integrating Go-Lab Ecosystem into teaching practice. Moreover, the close

collaboration between the NEC in Cyprus and other authorities, such as the Ministry of Education, aimed to increase the teachers' Go-Lab community in Cyprus and to create a network for support and exchange of good practices with the Go-Lab Ecosystem. Finally, whenever it was possible, the NEC in Cyprus accepted invitations to hold events out of the country, such the one conducted in Finland.

9.9 Outcomes

After each training workshop, participants became familiar enough with the Go-Lab Sharing platform and they were able to search for online labs and ILSs and explore the available apps. Most importantly, they knew where to find support if the decided to use Go-Lab, either from the Go-Lab support page or by contacting the NEC in Cyprus.

9.11 Related materials

The materials used during the training workshops were PowerPoint presentations (each time adapted to meet the needs of the target group), the Go-Lab leaflet and a Greek manual on how to use the Graasp for the creation of an ILS. The PowerPoint presentations for each event can be found on the NEC's events Space in Graasp (https://goo.gl/eftrAB). Figure 40 below, shows a selection of slides used in the training workshop in Finland.

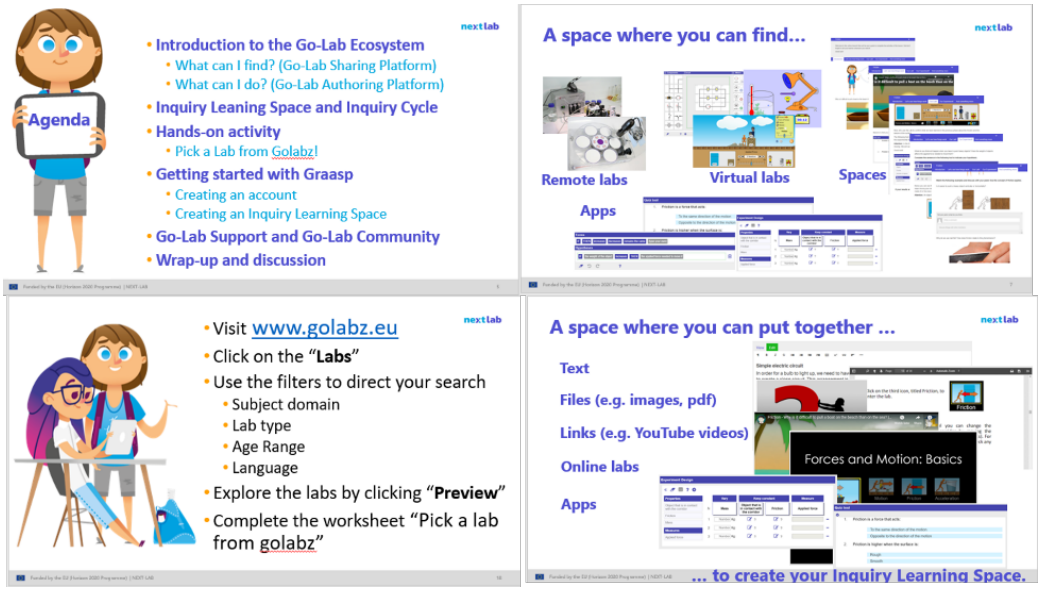


Figure 40: Selection of slides from PowerPoint presentation used in the training workshop

9.12 Website, Newsletter and Social Media

9.13 Website

In the website of ReSciTEG information about the Next-Lab project are included, accompanied by project flyers and selected examples of Inquiry Learning Spaces (https://ucy.ac.cy/resciteg/en/research/research-programmes).

9.14 Newsletter

N/A

9.15 Social Media Channels

ReSciTEG has its own Facebook page (***https://www.facebook.com/ReSciTEG/***) in which several posts are shared. During the second year of the project, 18 posts have been shared. Figure 41 shows two posts in the ReSciTEG Facebook page.

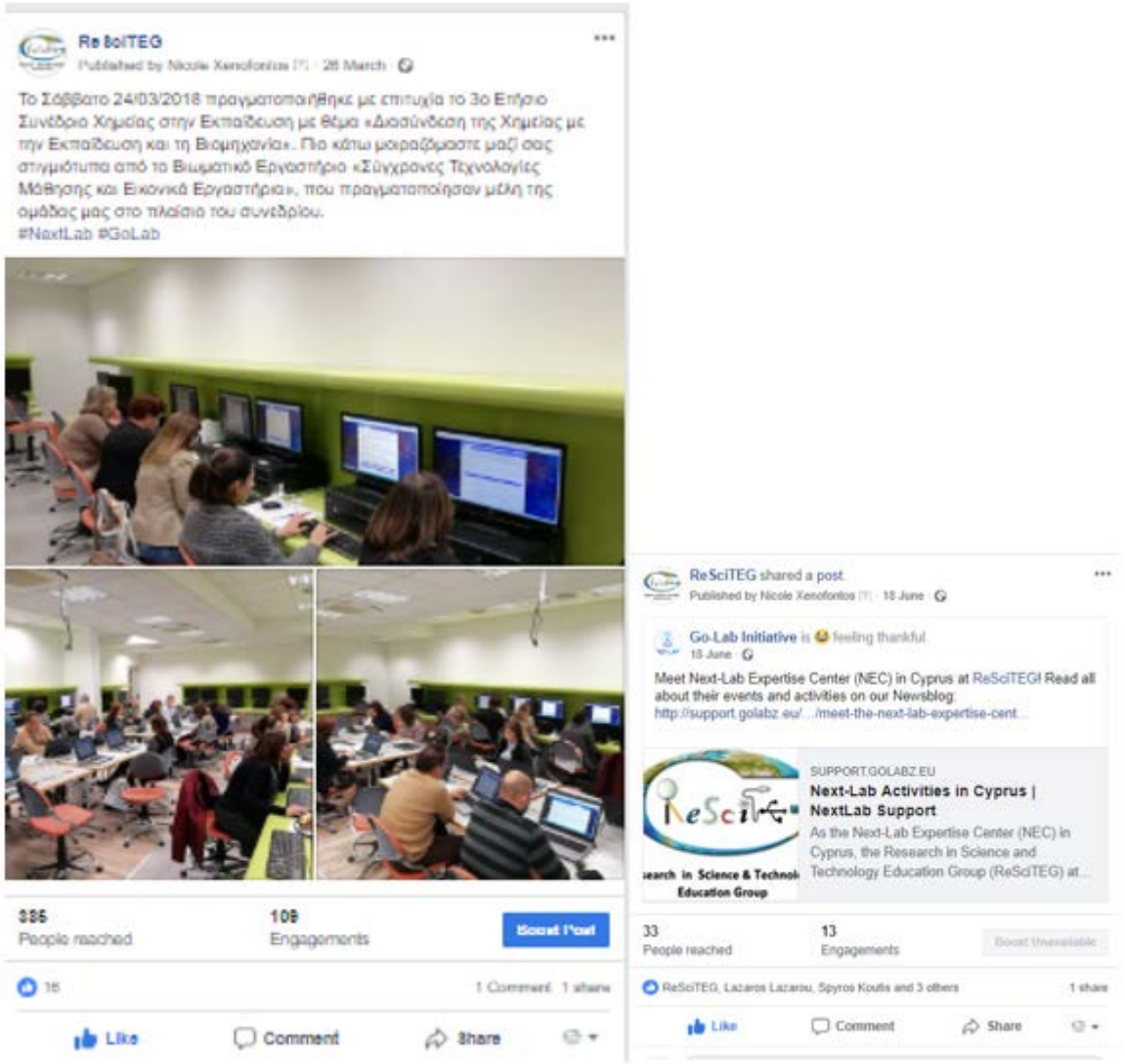


Figure 41: Shared posts in ReSciTEG Facebook page

9.16 Dissemination Channels Figures

Twitter followers	Facebook fans	YouTube channels view	LinkedIn group members	Newsletter	Website unique visitors	Instagram
-	380	-	-	-	7078	-