

GLOBAL^{excursion} ↩

Extended Curriculum for Science Infrastructure Online

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LIST OF ABBREVIATIONS

Abbreviation	Description
ViSH	Virtual Science Hub
UX	User Experience
SCORM	Sharable Content Object Reference Model
WYSIWYG	What You See Is What You Get

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Executive Summary

GLOBAL excursion aims to provide access to e-Infrastructures for teachers and their students via a Virtual Science Hub – ViSH, for more exciting and engaging science teaching.

As ViSH will play a decisive role in the success of the project it had to be carefully designed. This document presents all the changes that the GLOBAL excursion partners have introduced in the ViSH since its first release, which was described in detail in Deliverable 2.1.

The changes, updates and extended features presented in the second release of ViSH are mainly intended to improve the site's User Experience (UX) and usability. Finally new functions in order to create better, more complete learning experiences have been introduced.

Most of the changes have been motivated by user feedback gathered through the platform itself. In addition, the result of the project team's usability analysis and the comments provided by the European Commission reviewers in the first project review have been taken into account in this updated version of the ViSH.

1 Introduction

This deliverable explains the second release of the Virtual Science Hub (ViSH) platform. It is now in use at <http://vishub.org>; the first release URL <http://vishub.global.dit.upm.es> redirects to the production platform so we do not lose any first version user.

The general usability of the platform has been improved by introducing the feedback received from the project partners, participating teachers and other general users, such as teachers and researchers that have joined the platform due to the dissemination activities carried out by the project partners while keeping the look and feel (i.e. colours, sizes, icons, etc.).

On the other hand much new functionality has been introduced for this version. It allows users (teachers and scientist) to interact in an easier way and to create and share more complex and advanced pedagogical content, but at the same time it keeps the interfaces simple.

Through this document we will explain both the new functionality introduced and the usability improvements. It should be stated that the main deliverable D2.2. is the ViSH release itself. This document has been prepared in order to illustrate the changes realised in the software itself.

2 New features

This section explain the new features introduced in ViSH since the first release, with some insight about how they work and some screen captures to understand them. We can divide them in two types:

1. Features related to the social network and site navigation
2. Features related to excursion creation

2.1 Social network and site navigation

2.1.1 Folksonomies

Folksonomies are classification systems related to scenarios in which the tag creation is done in a collaborative way by the users in the platform in order to annotate and categorize content.

Folksonomies have been introduced for all actors and objects of ViSH (i.e. users, resources and excursions). Users can now specify their “areas of interest” in their profile. ViSH will use this information to suggest tags when adding a new resource or creating an excursion. This information is also used to recommend them other users, resources or excursions that can be of interest for them.

Resources can also be tagged. This information will be very useful in order to suggest resources to other users that are creating an excursion, or in order to search for resources more easily.

Finally excursions can be tagged according to their topics so that ViSH knows what the excursion is about and can use this information to index it or recommend it to other users. This again adds to an easier way of searching for specific excursions.

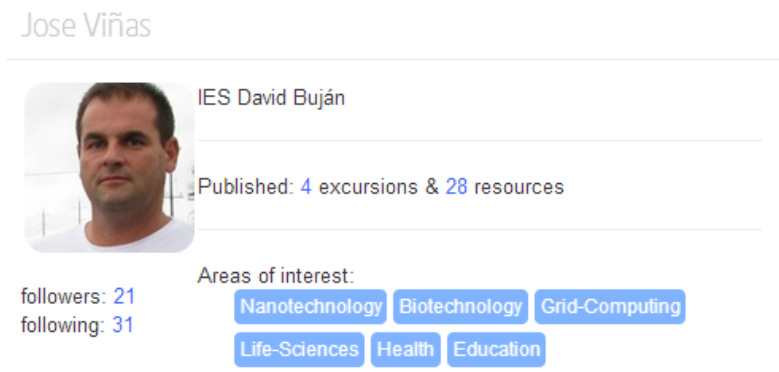


Figure 1 Example of tags in profile

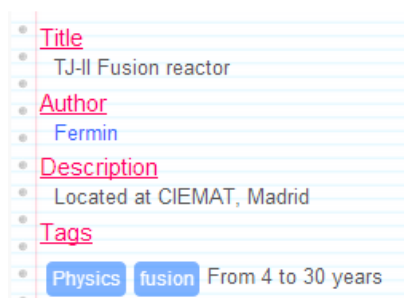


Figure 2 Example of tags in excursion

2.1.2 Search feature

The search feature already existed in the first release but it has been radically improved. Users can now search also for activities (status updates or comments from other users). Search results can be filtered by date, author, type, and some parameters regarding the search target type such as number of slides (for excursions) or file type (for resources).

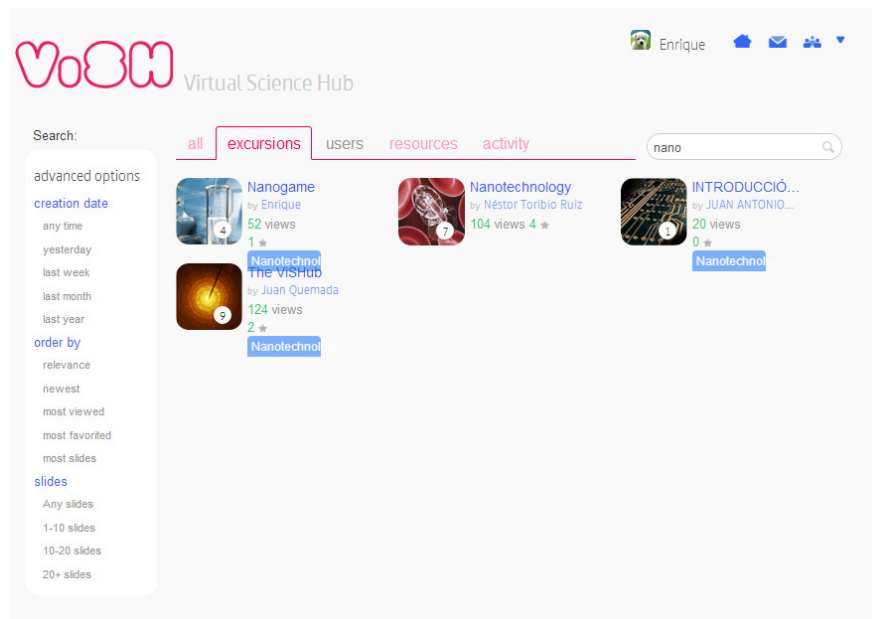


Figure 3 Example of search results with filters

2.1.3 Resources and users preview in a modal

This feature facilitates navigation drastically. Users can preview the main information of another user's profile or a limited version of resources in a modal window without leaving the home page. Should they want more information, they can click in "See details" to go to the full resource view or the other user's profile.

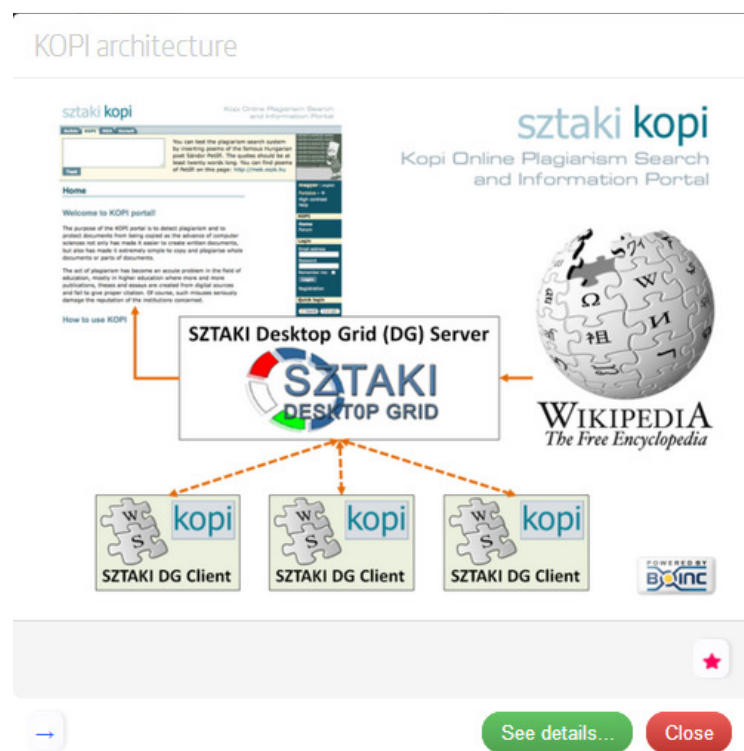


Figure 4 Resource modal

2.1.4 Recommender system

In the first version a very basic recommendation existed, as it recommended only the most popular users, resources or excursions.

For this second release, an enhanced recommender system has been introduced. The recommendation is based on the user profile, his/her interests and his/her activity in the platform.

For example if a user's interests are "biology" and "education", other users with the same interests, resources and excursions related to those topics will be recommended.

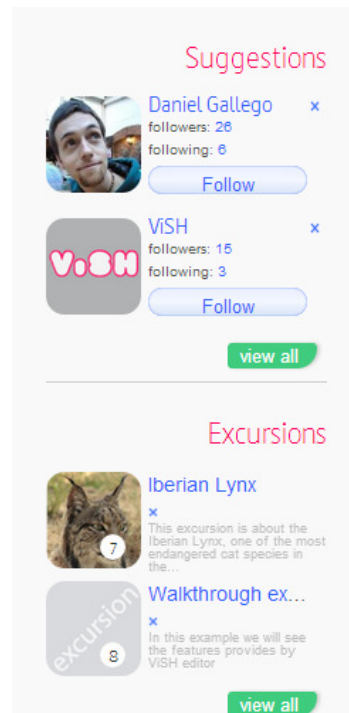


Figure 5 Recommendation

2.1.5 New tabs in excursions, resources and timeline section

The user homepage and profile page now feature tabs that facilitate the navigation and organization of the resources, the excursions and the timeline.

These tabs are:

- **“network”**: shows the resources or excursions of user's network based on the users he/she follows.
- **“my”**: shows resources or excursions belonging to the user.
- **“forMe”**: shows personalised recommendations adapted to the user profile, activity, etc.
- **“star”**: shows resources or excursions that the user mark as favourites.

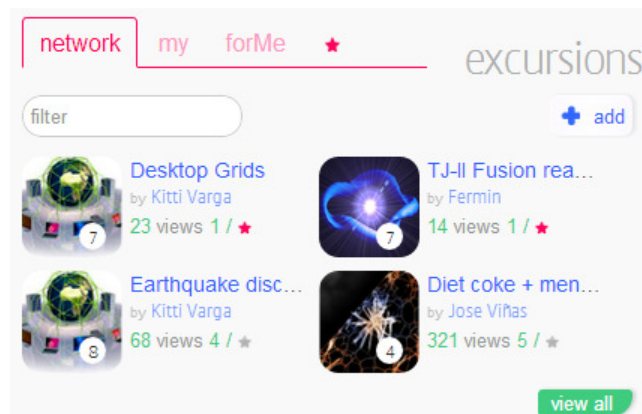


Figure 6 New tabs in excursions

2.1.6 Favourite excursions and resources

Users can now add a “star” to excursions and resources to mark them as favourites. This information is used both as an orthogonal way of cataloguing information (so that excursions and resources appear in the “star” tab), and as a feedback for the recommender system.

The star is grey and becomes pink when a user marks the resource or excursion as favourite.

2.2 Features related to excursions

Most of the functions related to excursions are performed by the buttons bar that is placed below the excursions viewer (see figure 7). The buttons are from left to right:

Embed, share, clone, download SCORM, mark as favourite and share through MashMe.

Between favourite and Mashme we can see additional information about the number of times an excursion has been viewed and the number of users who have marked it as favourite.

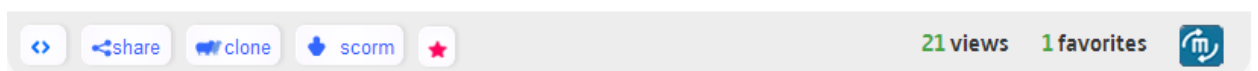


Figure 7 Buttons bar below excursions

2.2.1 Share and embed

Excursions can be shared and embedded in other websites (such as blogs or other educational sites). We use an iframe for this.

Excursions can also be shared providing the URL (we also shorten it). They can also be shared in Twitter, Facebook, Google + or send the URL directly by email.



Figure 8 Share excursion options

2.2.2 Clone feature

In this second release other users' excursions can be cloned. This way any user can take another excursion, clone it to get a copy and then edit it to correct any mistake, improve it or translate it in case he/she finds the excursion interesting, but it is in another language that his/her students would not understand.

2.2.3 Download as SCORM

Sharable Content Object Reference Model (i.e. SCORM) is one of the most used and known e-learning standards to share and reuse educational objects (Gonzalez-Barbone, Victor, and Luis Anido-Rifon, 2008). It is used in most Learning Management Systems (LMS) such as Moodle to input resources.

When the user clicks on the "scorm" button he/she gets a zip file with the excursion and can now use the excursion in any external site that supports SCORM.

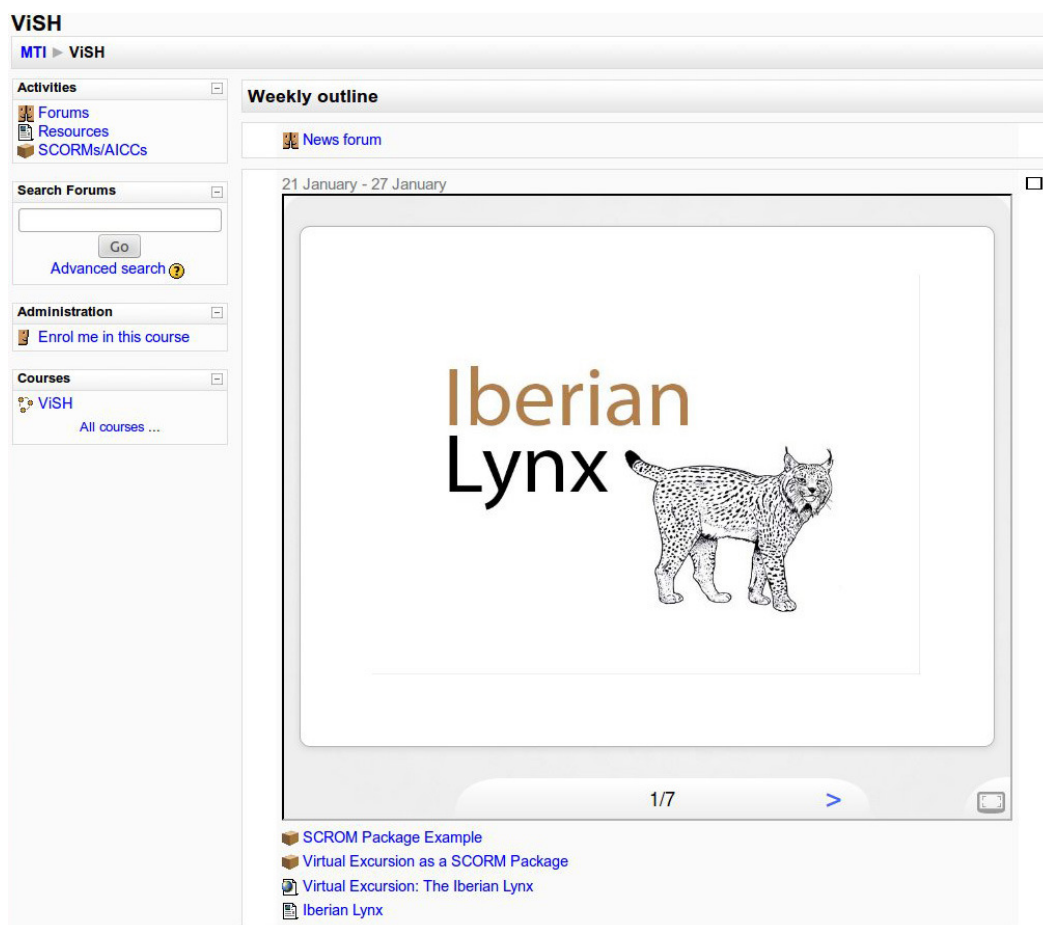


Figure 9 Virtual Excursion added as SCORM package in Moodle

2.2.4 Favourite

With the star button the user can make an excursion favourite. This is the same functionality as 2.1.6

2.2.5 Integration with MashMe

MashMe.tv (<http://www.mashme.tv>) is a videoconferencing service where users can collaborate easily in real time. They can share videos, websites, maps, a blackboard, documents, etc.

Since excursions can be accessed by a unique URL, they can also be shared in MashMe.tv. An integration effort has been made so that they will be synchronized among all the users in the videoconference.

If the user clicks on the MashMe button in the buttons bar he/she will be able to invite other contacts to a videoconference session and then an iframe with MashMe will open with his/her video (if he/she has a webcam) and the shared excursion ready to explore.

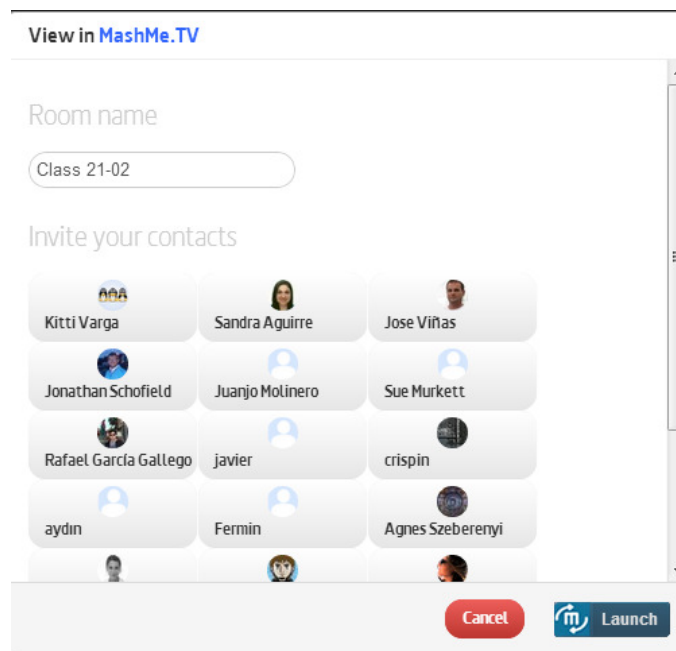


Figure 10 Invite contacts to join MashMe session

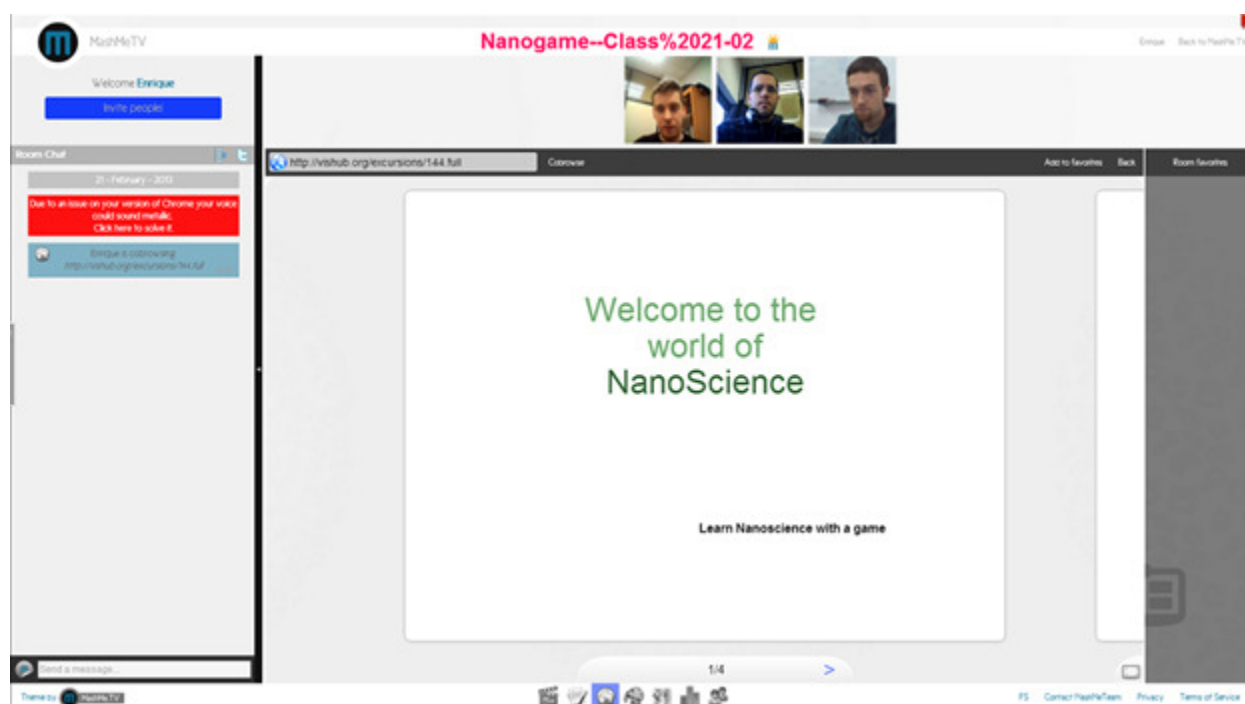


Figure 91 Excursion shared through MashMe

2.2.6 Comments in excursions

The possibility to add comments to excursions has also been added in this second release. Users can use this section to share their thoughts about the excursion, or to ask questions to the author if they have any doubt.

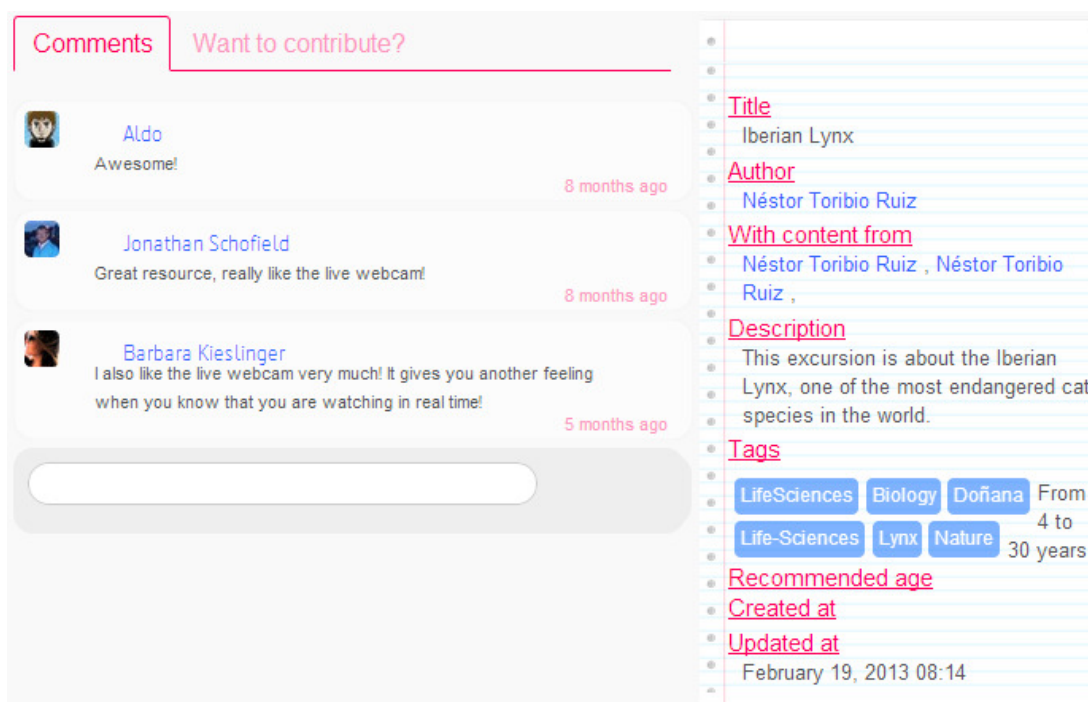


Figure 12 Comments in excursions

2.2.7 Pedagogical evaluation of Excursions

Pedagogical evaluation is very useful for educational resources, even more in collaborative social networks where all users can publish content (as opposed to a group of experts in charge of providing the content).

Users can give their opinion about some pedagogical attributes of the excursion to contribute to the evaluation of that excursion. The questions addressed to the users are in line with the pedagogical framework as well as with international standards for assessing educational resources.

Users can also see the results of the evaluation of the rest of the users as a bar graph.

2.2.8 Full screen and excursions paginator

Possibility of viewing the excursion in full screen is very useful, so the excursion occupy the whole user screen. The button for this function is in the right bottom corner.

Also a paginator has been added indicating the page number and allowing the user to move right and left with a simple click on the arrows.



Figure 103 Paginator and fullscreen

2.2.9 Better support for mobile devices

Several tasks have been performed in the excursions viewer in order to improve the support for mobile phones and tablets: content adaptation, content filtering, gesture recognition, full screen functionality for tablets, etc.

2.3 Features to create better excursions

2.3.1 Contextual help

In the excursion creator users can find a question mark icon that will open a help interface explaining what the user is doing in that precise moment.

The help consist of one or several steps depending on how complex the task is.



Figure 114 Contextual help button

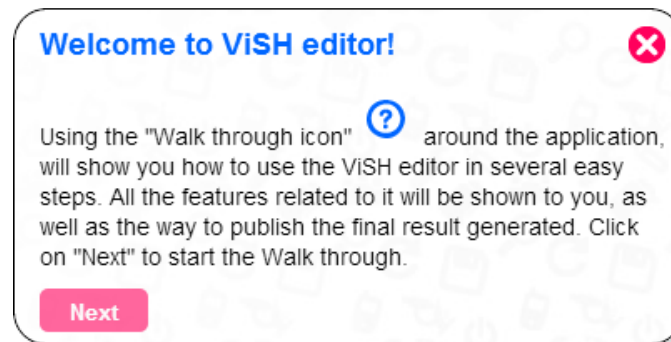


Figure 125 Contextual help example

2.3.2 Add your own excursion thumbnail

Users can upload an image to be used as thumbnail for their excursion. The upload process is very simple, and has been integrated with the carousel for thumbnail selection.

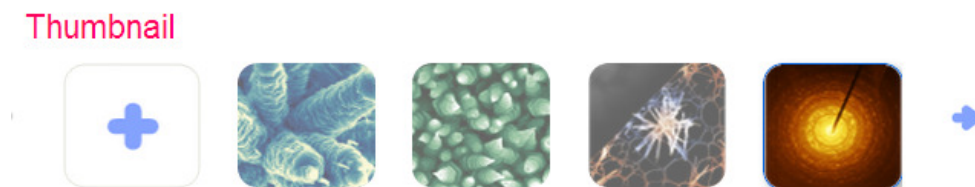


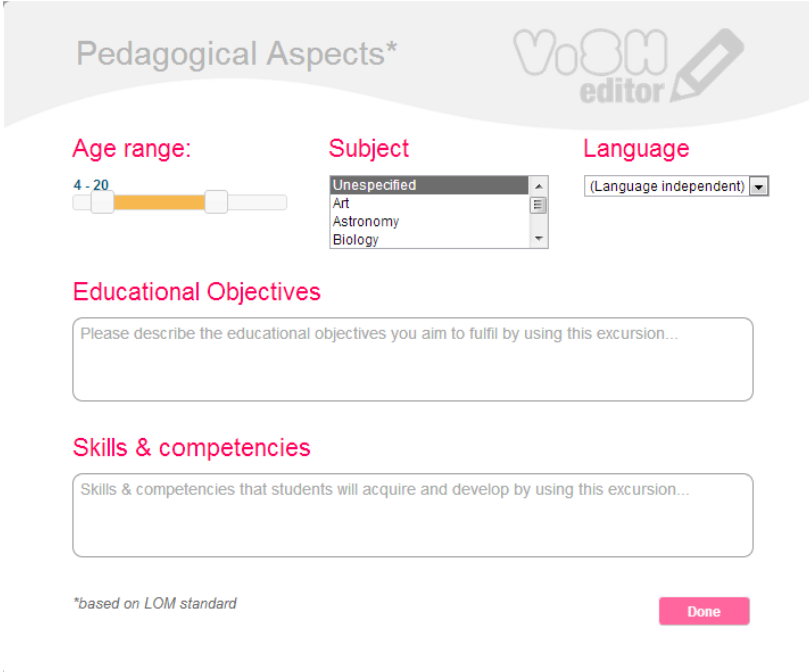
Figure 16 Add your own excursion thumbnail

2.3.3 Pedagogical aspects

In the process of creating an excursion users can add pedagogical information.

These pedagogical aspects are:

- Age range of students
- Language of the excursion
- Subject
- Educational objectives
- Skills and competencies that students will acquire when doing this excursion.



Pedagogical Aspects*

Age range: 4 - 20

Subject: Unspecified, Art, Astronomy, Biology

Language: (Language independent)

Educational Objectives
Please describe the educational objectives you aim to fulfil by using this excursion...

Skills & competencies
Skills & competencies that students will acquire and develop by using this excursion...

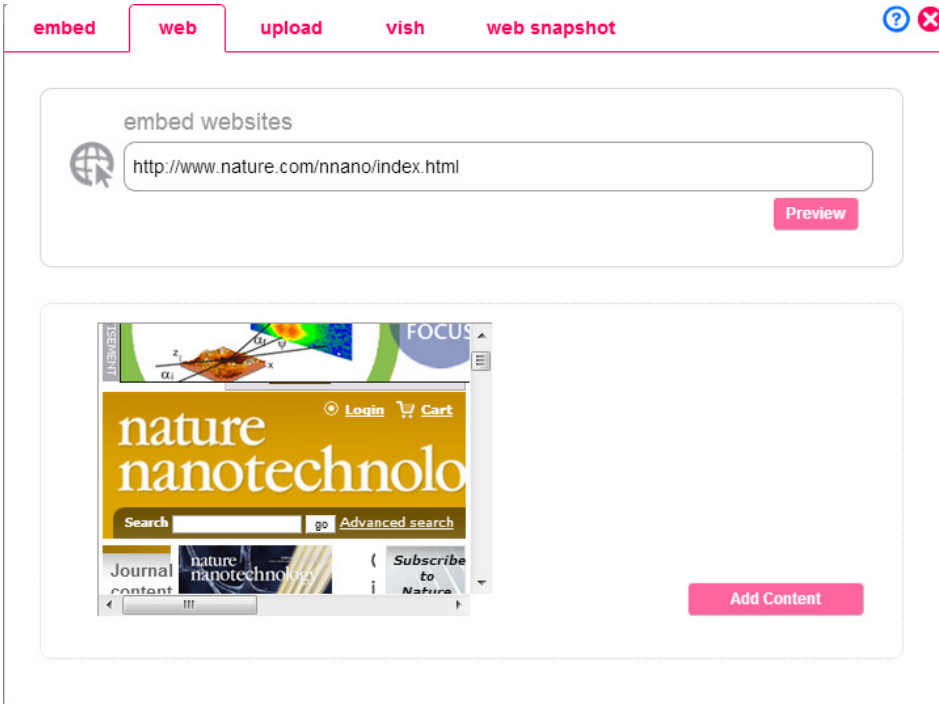
*based on LOM standard

Done

Figure 17 Pedagogical aspects

2.3.4 Embedding websites

External websites can now be embedded as part of excursions using iframes. In addition, we can embed just a specific fragment of a website using a new functionality that we have called “web snapshot”. These are very important features that enable a lot of possibilities to introduce e-Infrastructure resources.



embed **web** **upload** **vish** **web snapshot**

embed websites


<http://www.nature.com/nnano/index.html>

Preview

Add Content

Figure 18 Adding a website

2.3.5 Excursion preview

In the process of creating an excursion users can preview how the final result will look like. The button for this function is on the bottom right corner and is represented by an eye .

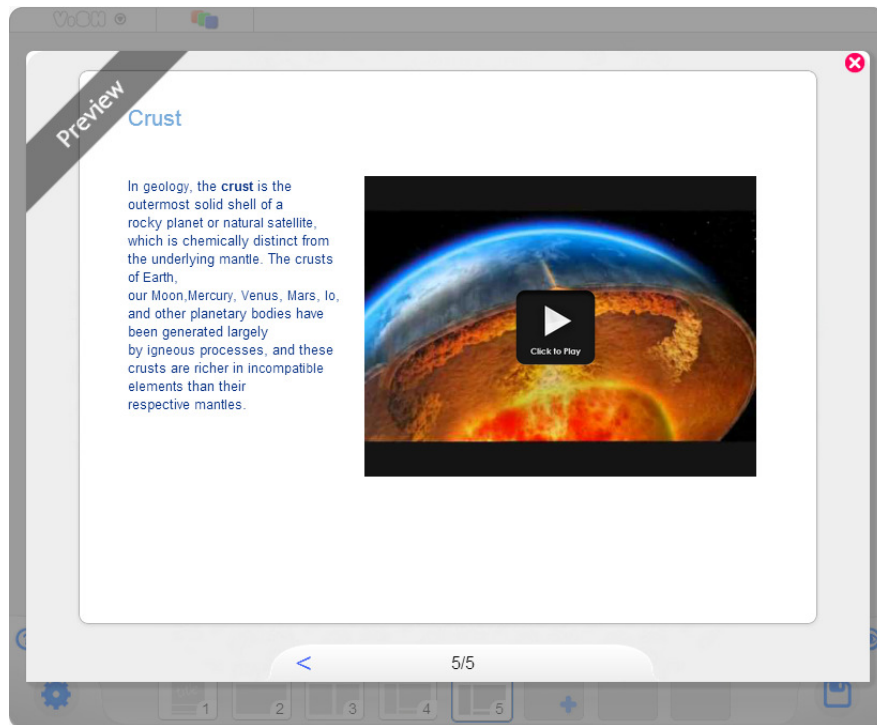


Figure 19 Preview

2.3.6 Excursion drafts

Excursions can now be saved as drafts, so owners can only see them while they continue editing them. This way the creation process can be spread across several sessions, possibly on different dates.

When an excursion is cloned using functionality 2.2.2 (see above), it will be first saved as a draft.

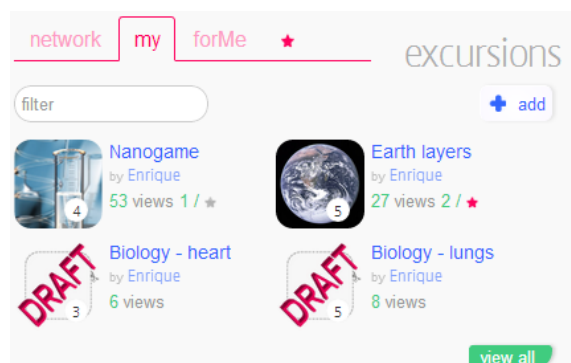


Figure 20 Drafts

2.3.7 More templates in excursions editor

Templates are used to organize the content in the slides of the excursion. In the first version only 6 different types of slides could be created. This new release introduces 9 new types of templates, allowing users to better organize their content the way they want.

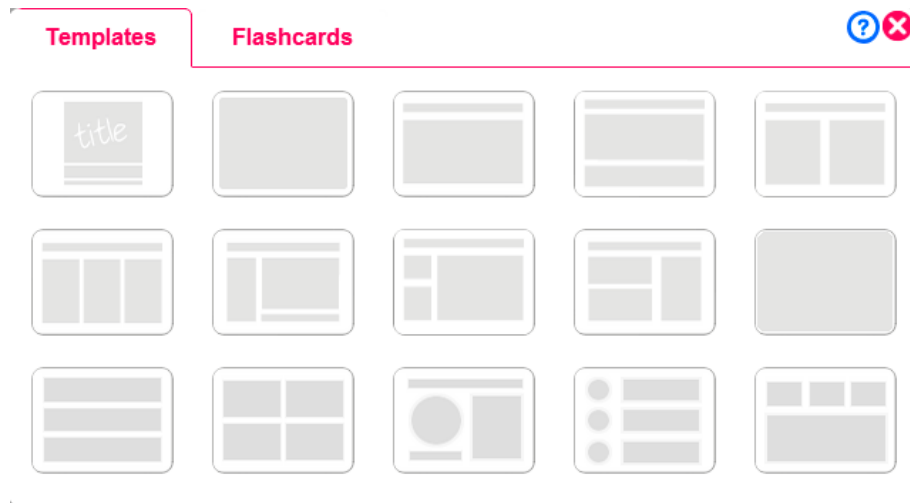


Figure 21 Templates

2.3.8 Themes in excursions

In this second release themes can be applied to excursions. This way not all the excursions need to have a white background. The look and feel can be changed according to the user preferences or the excursion topic.



Figure 22 Themes

2.3.9 Flashcards

A flashcard is a special visualization of the excursions where the user selects a background and special points that will be represented by moving arrows to which the excursion slides will be linked.

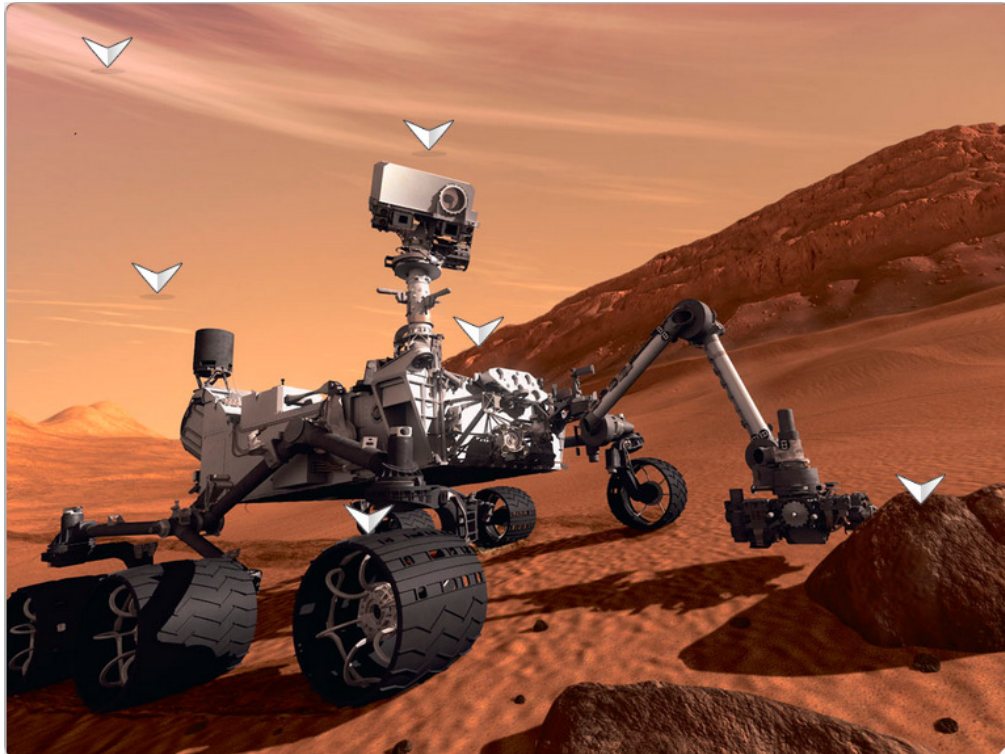


Figure 23 Flashcard

2.3.10 Virtual Tours

A virtual tour is another special visualization of the excursions similar to the flashcard. In this occasion, instead of using a static image background, the user can use an interactive map. The user can search specific locations using the Google Maps service and add points of interest to the map that will be represented by pins to which the excursion slides will be linked.

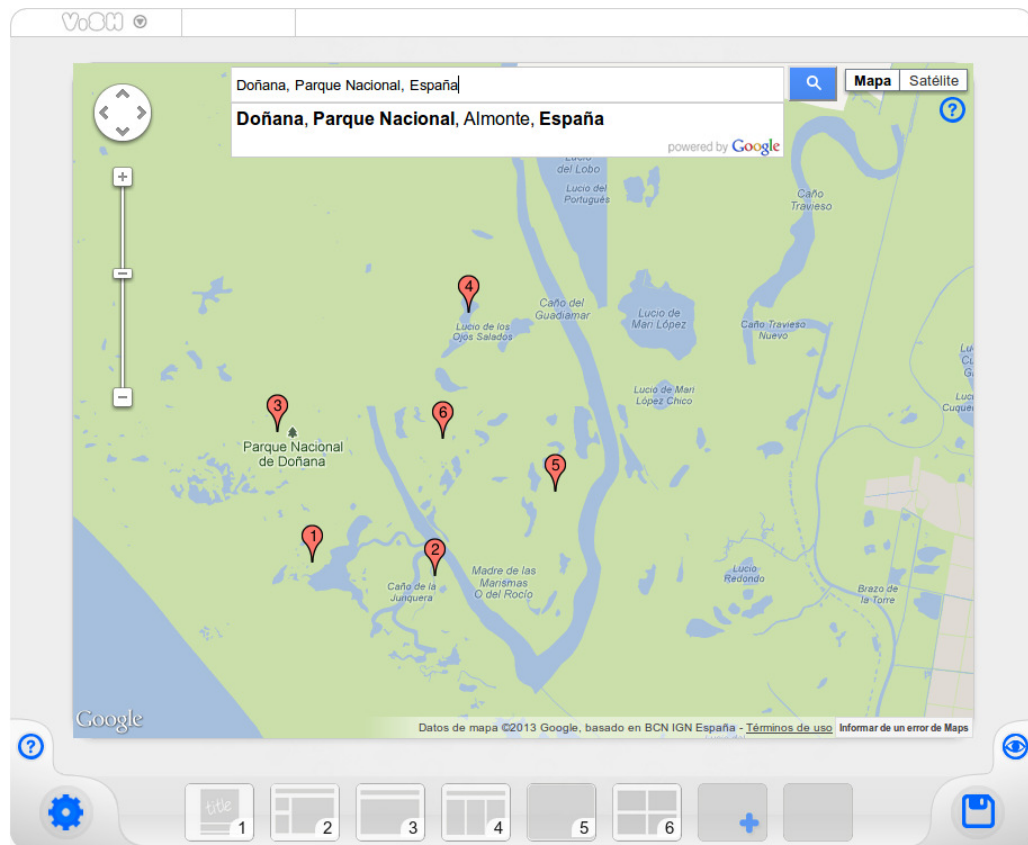


Figure 24 *Creating a Virtual Tour*

2.3.11 New Text Editor

Motivated by user feedback, we have integrated a new more powerful text editor.

The new text editor still following the WYSIWYG ("what you see is what you get") paradigm, and it provides new very useful features: more available fonts, font sizes and colors, lists, tables, superscript/subscript formats and so on.

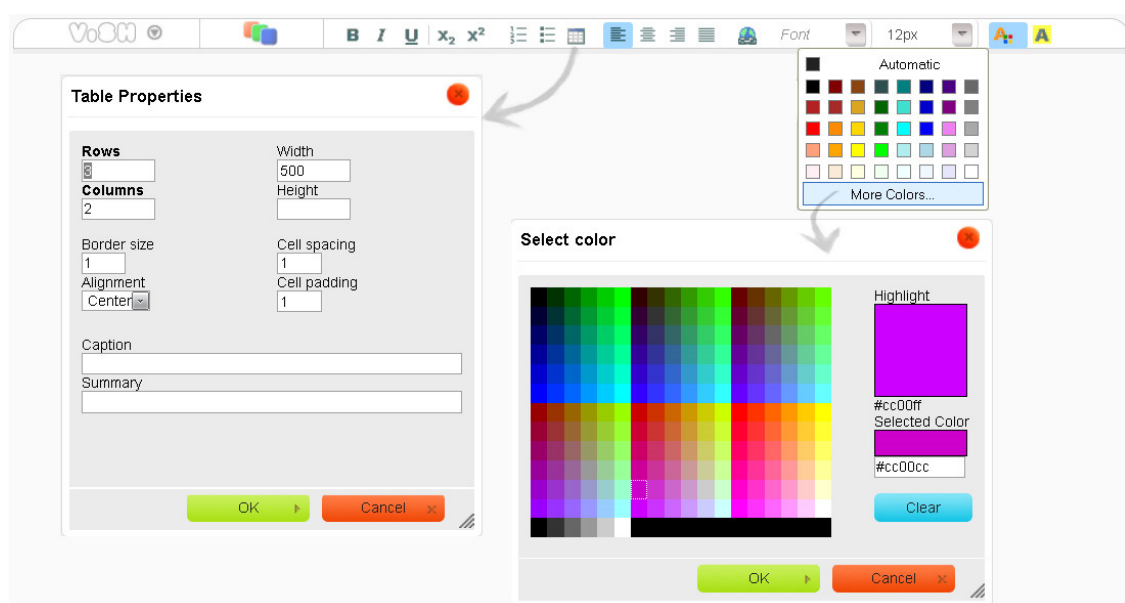


Figure 25 *New Text Editor*

3 Usability improvements

Due to users feedback received and the analysis of the system use performed by teachers and scientists, many usability improvements have been introduced for this second release.

3.1 New logo

A new logo based on different science fields, like biology, nanotechnology, chemistry, etc., has been designed. The old simple logo has been kept in the top bar as in small size it represents the letters ViSH in a better way.



Figure 26 New logo

3.2 Notifications removed

After analyzing the server logs, we realize that the notifications page was almost never accessed. Consulting users, they even did not know it existed. In addition to this, they did not perceive any utility on using it, so it was removed. Important notifications have been replaced by internal messages. Notifications still reach the user's email inbox if such configured accordingly by them.

3.3 Followers/following contacts in home page

Followers and following people are shown in the homepage, so users can see who is following them and who they are following with a simple look.

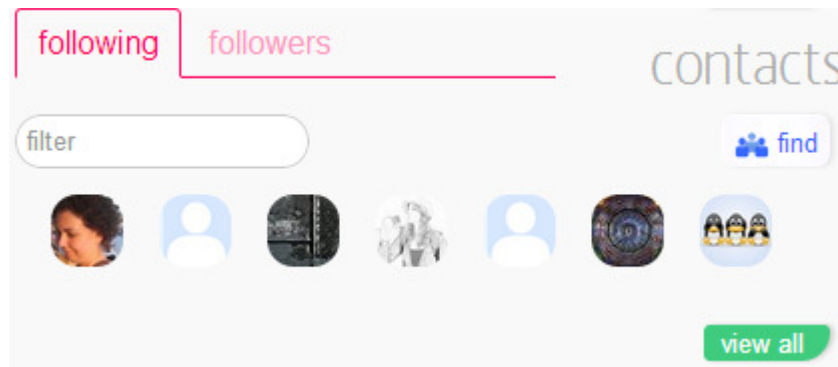


Figure 27 Followers and following contacts

3.4 Announces

Both the front page and the user homepage feature an **announcements box**.

In the homepage it is placed above the timeline, whereas in the front page below the top ten excursions.

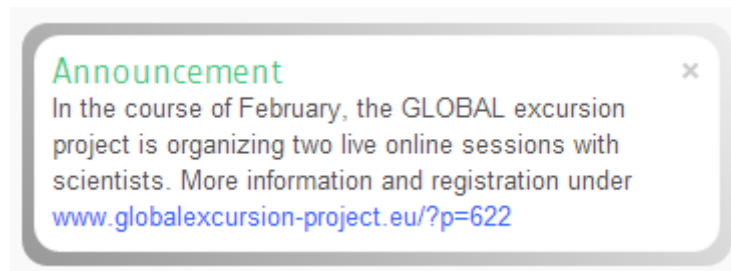


Figure 28 Announcement in homepage

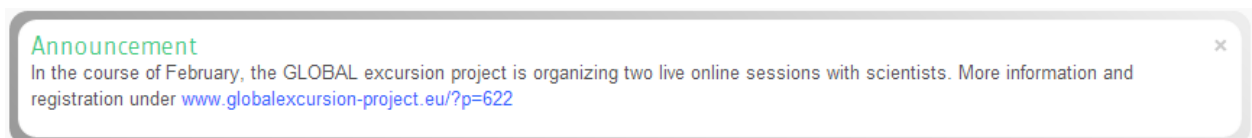


Figure 29 Announcement in frontpage

3.5 Excursions additional information

Additional information is shown in the excursions page.

It includes the excursion's title, author, content contributors, description, tags, recommended age and the date and time related to when the excursion was created and last time updated.

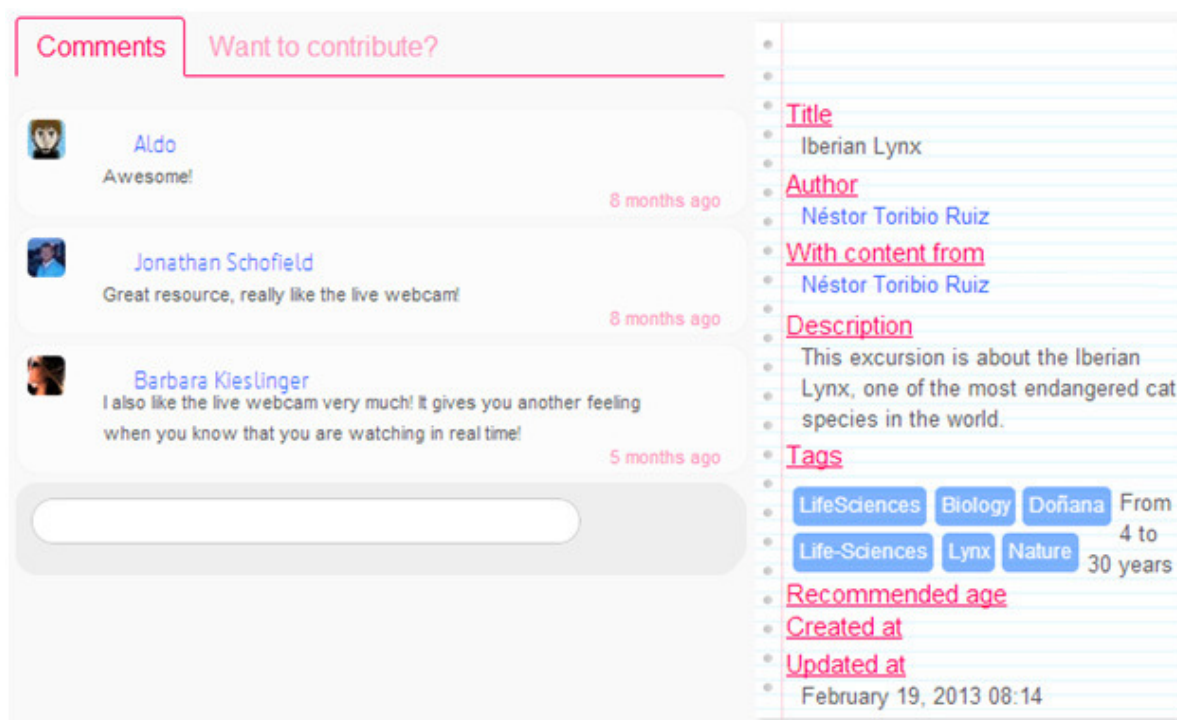


Figure 30 Excursion additional information

4 Conclusions

This deliverable describes the new features and improvements introduced in the ViSH platform since its first release.

The development process has been done following a spiral model, with quick releases as soon as the new function had been developed and tested. This has been considered the second major release, but many intermediate releases have been used. This way, the production server has always been online and the platform has evolved one functionality at a time.

The platform will continue evolving solving bugs that may arise and introducing new functionalities and improvements that users request.

Bibliography

Gonzalez-Barbone, Victor, and Luis Anido-Rifon. "Creating the first SCORM object." *Computers & Education* 51.4 (2008): 1634-1647.