I2Geo: Sharing Across Curriculum Regions

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Abstract. This demonstration will present the I2geo web-platform and its search tool whose objective is to provide a central exchange for interactive geometry constructions and related materials that are found scattered in many places, communities, formats, and languages across Europe and beyond.
The project is at work to encode the competencies and topics of the mathematics curriculum standards of Europe within an ontology. Thanks to the it and its methods of input, encoding, and display, a user of Germany can annotate a resource about *rechter Winkel* and a French teacher can find it by typing *angle droit*. Textual matching would have doubly failed here: the missing translation, and the wrong matches of separate words *angle* and *droit*.
The platform also invites active contribution of reviews so as to, as well, influence the search tool.
Both the reviews and search tools will be presented.

Keywords

interactive geometry, sharing, web, search, curriculum standards, ontology

1 Demonstration Description

The demonstration below will explain you how to enjoy some of the nice facets of the i2geo platform.

`http://i2geo.net/`

System Requirements

i2geo is on the web and should work with all contemporary web-browsers. It has been mostly tested on recent Mozilla version (Firefox 3.0 most notably) as well as Apple Safari. It should be noted that both cookies and javascript need to be enabled for i2geo to run.

1.1 Searching

Since i2geo is a multilingual platform, you will probably be presented with an interface in your language. For the sake of this demonstration, we invite you to go switch to English using the language pop-up.

A first attempt could be to search for the *intercepting lines theorem*. You can do so by going to the simple search on the top-right and typing the words *intercept theorem* then waiting half a second. A list of suggestions is presented.

Click on the top box: *text: intercept theorem*. You are presented with the result of the matches... not much with this real theorem about proportionality and parallel lines. The reason is that the word theorem has been matched.

Now type *intercept theorem* again and choose the node *intercept theorem* that has a little circled-T in the front from the suggestions. You obtain a list of resources, in French, German, and Spanish, that all speak about this same theorem. Changing language here may be interesting to see the translations of the topic. You can also browse about this topic by clicking on it.

Please choose one of the resources and see the display of a single resource.

For an even finer grained search, consider inputting a competency, such as *use the vocabulary attached to division*.

1.2 Contributing

In order to contribute a resource, you will need access to your email and to register to the platform by clicking on the *Become a member* link on top. Note that lack of activation will just make your account unusable.

Choose a file or URL you deem relevant to i2geo and go to the menu on the left, invoking *Add a Resource* under *Contribute*.

The first contribution step is to provide the type and basis data. The second step will ask you as detailed cataloguing information as possible: a title and description as well as trained-topics and competencies and educational levels which both are entered by choosing suggestions.

After having clicked inside the box, you may also click on the link *curriculum-texts* which opens a window listing the current set of curriculum-standards that we have hyperlinked. They open in a separate window and allow you, where linked, to click the relevant sentence to choose the underlying topics and competencies. Please remember the

Having documented the cataloguing information, the next screen allows you indicate the license which is a very fundamental aspect of re-use and is displayed in the resource display.

You could try to search for the competencies, levels, and topics you annotated for.

1.3 Collecting

An external way of collection i2geo resources is, of course, to use hyperlinks: all non-private state-views of i2geo are publicly web-accessible and linking from outside is encouraged.

Another way to collect is to use the collections of i2geo: click on your name displayed aside of the *Welcome* message. You can now view your profile (which is only accessible to logged-in users). Click on the *collections* tab and see that you do not have, yet, a collection. Click on *Add a collection*, give it a name and topical information.

Having done that, you can now search for interesting resources, for each resource, press the link *Add* which is followed by a drag-and-drop action to include this resource in your collection.

The collections are important for the eyes of the others since they group things that, you think, fit together by some criteria.

1.4 Reviewing

Having found a nice resource, and having played with it, you are invited to see the reviews of the others (which are mostly multilingual) and to add a review to tell your opinions about it.

The reviews can be filled very quickly, just answering the eight top-level questions or very deeply by going into all the details and providing comments.

Having filed a review, please give another try to the search to see if the search result got affected.

2 Technical Details

The demo stand can be any table with power for a laptop and wireless web access. The network should be reliable as i2geo uses many background requests which, when failing, are only shown as bizarre behaviours.

The demo stand would benefit of a video project to demonstrate the steps or discuss them.

The demo session should happen very well with attendees' laptops also connected to the internet (same conditions).

3 Target Audience

I2geo is aimed at practicing math educators.

This demo, which is more a walk through the technical highlights, can be attended by teachers interested to the topic. It is more aimed at stimulating discussions and perspectives about the usage of cross-curriculum sharing and searching of educational resources among learning technology researchers.

4 Screenshots

Elements of this demonstration are available in English and French as screencasts from the home page of i2geo: `http://i2geo.net/`

Thus far, the videos *Create Simple GeoGebra Resource* and *Evaluate a resource* are available.