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I2GEO.NET – A PLATFORM FOR SHARING DYNAMIC GEOMETRY RESOURCES ALL OVER EUROPE

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The poster presents the I2Geo platform developed within the Intergeo project¹ whose ambition was to develop a Pan-European mathematics teacher community enabled to share resources and practices related to the use of dynamic geometry systems (DGS). We present the main tools and services of the platform and discuss the possible impact of the platform usage on math teachers' professional development.

Keywords: Intergeo, I2Geo platform, dynamic geometry

DGS are well known computer tools to support mathematics teaching and learning by means of personal explorations and experience. Despite their availability and the recommendations, or even requirements, in European countries curricula to use them, their integration in schools is still unsatisfactory (Hendriks *et al.* 2008). The Intergeo project (Kortenkamp *et al.* 2009) tackles main obstacles to DGS integration: (1) difficulties to find suitable resources due to the lack of metadata describing accurately their content, (2) the impossibility to exploit with a given DGS resources created with another one, (3) the lack of quality guarantees of available resources. We briefly expose and illustrate solutions proposed to overcome these obstacles.

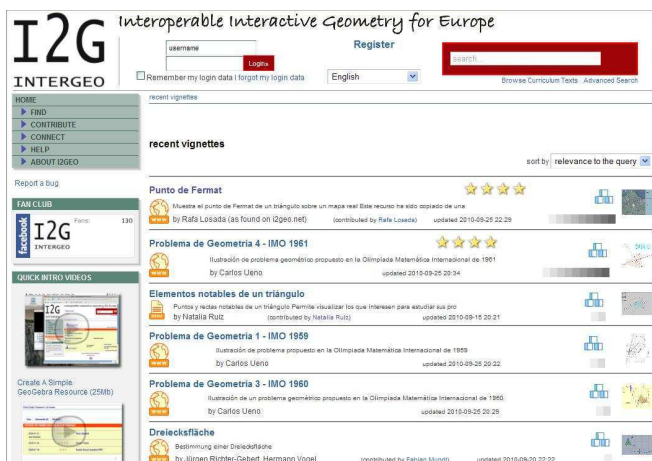
SHARING DG RESOURCES

An accurate resource content description is necessary for easy finding and sharing resources. The challenge in Intergeo consisted in defining international metadata allowing a cross-curricular resource search regardless of language and cultural differences. This was achieved by defining a mathematical topics and competencies ontology making it possible to find resources even if they are written in different languages. Moreover, different sophisticated search tools (such as a search associated to key words from the different national curricula) have been developed.

INTEROPERABILITY OF DGS

One of the obstacles in the use of DG is the issue of user lock-in with respect to a particular software product. Learning new software is time consuming and usually unrealistic for teachers. The project defines a common interoperable file format that

¹ Intergeo was co-funded by the European Union within the *eContentPlus* programme, 2007-2010. See <http://i2geo.net>



allows describing any construction created with a DGS and that can be used to interchange content between DGSs. The standards are supervised by a non-profit association, Intergeo A.s.b.l.

Figure 1. Main page of the platform displaying a list of resources.

QUALITY ASSESSMENT PROCESS

Quality assessment of DG resources in the Intergeo project (Trgalová *et al.* 2009) aims at promoting access to best quality resources, as well as at ensuring their continuous improvement. The main tool supporting DG resource quality assessment

| | |
|----------------------|--------------------------------------------------------------------------------------------------------|
| ▶ ○○○○ | I found easily the resource, the audience, competencies and themes are adequate |
| ▶ ○○○○ | The files are technically sound and easy to open |
| ▶ ○○○○ | The content is mathematically sound and usable in the classroom |
| ▼ ○○○○ | Translation of the mathematical activity into interactive geometry is coherent |
| ○ ○ ○ ○ | The math and the figures are related |
| ○ ○ ○ ○ | The figure is behaving consistently within the activity |
| ○ ○ ○ ○ | The figure shows no ill effect |
| ○ ○ ○ ○ | The numerical values (angles, lengths) are consistent |
| ○ ○ ○ ○ | Functionalities and specific behaviors like sliders, keyboard interaction or macros are well described |
| Comments: | |
| <input type="text"/> | |
| ▶ ○○○○ | In this resource, Interactive Geometry adds value to the learning experience |
| ▶ ○○○○ | This activity helps me teach mathematics |
| ▶ ○○○○ | I know how to set my class for this activity |
| ▶ ○○○○ | I found easily a way to use this activity in my curriculum progression |
| ▶ ○○○○ | The resource is user friendly and adaptable |

Figure 2. I2Geo online quality questionnaire.

on the platform is a standardized questionnaire organized around nine dimensions of a resource related to its mathematical, didactical, pedagogical, technical and ergonomic aspects. Quantitative evaluation of a resource along these aspects in terms of a 4-level range of agreement can be complemented by qualitative comments, which are crucial for the resource improvement.

I2GEO PLATFORM AND TEACHER PROFESSIONAL DEVELOPMENT

Around 3000 resources are available on the platform and more than 500 evaluations have been performed to this day. The analysis of the resource reviews and of the interviews with reviewers provides evidence that involvement into a quality assessment process is an interesting means of life-long teacher professional development by reflexive analysis and the diffusion of best pedagogical practices.

REFERENCES

- Hendriks, M. (2008), *Status quo report on DGS usage*. Intergeo deliverable D5.1, January 2008.
- Kortenkamp, U., Blessing, A. et al. (2009), Interoperable Interactive Geometry For Europe – First Tech. and Educ. Results and Future Challenges of the Intergeo Project. In V. Durrand-Guerrier et al. (Eds.), *Proc. of the Sixth CERME conference*, Jan 28 – Feb1 2009, Lyon, France.
- Trgalová, J., Jahn, A. P., Soury-Lavergne, S. (2009), Quality process for dynamic geometry resources: the Intergeo project. In V. Durrand-Guerrier et al. (Eds.), *Proc. of the Sixth CERME conference* (pp. 1161-1170), Jan 28 – Feb 1 2009, Lyon, France.