



Why must schools use FOSS4G?

Portuguese OSGeo
Education Workgroup
(**Ricardo Pinho**)

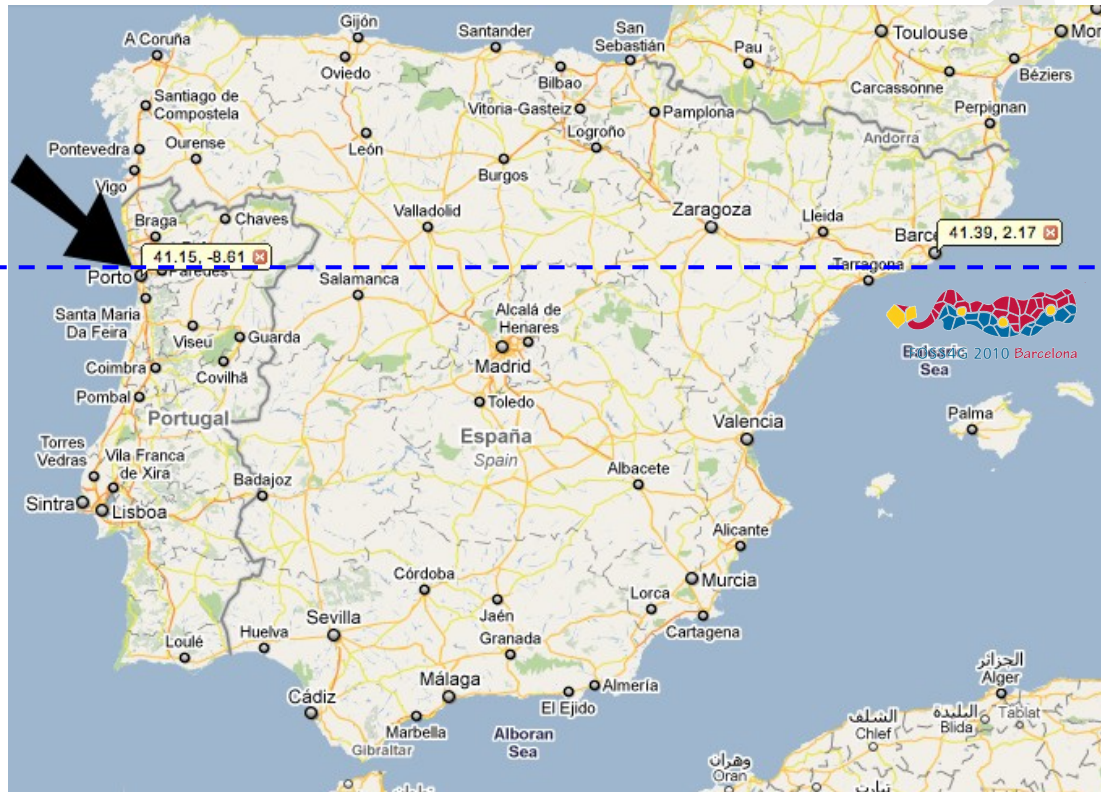
Introduction



FOSS4G 2010 Barcelona

- I come from **Porto - PORTUGAL**, 10 degrees West, a **northern city** from the neighbouring country

41° Parallel



Introduction



- I come from **Porto - PORTUGAL**, 10 degrees West, a **northern city** from the neighbouring country
- I work for a Portuguese Local Authority
- I represent the **Portuguese OSGeo Education Workgroup**
- I am very glad to be at FOSS4G “*con nuestros hermanos*” in this **amazing city of Barcelona!**
- Please forgive me if my English isn't perfect!

“Why must schools use FOSS4G?”

1. Why teach with software?
2. Free VS Closed Software for Education
3. The Education Workgroup initiative
4. Case studies
5. Future Workgroup plans

Teaching tools

- From the past...



Teaching tools

- To the present...



Teaching today



- The Internet, computers and **software are valuable tools for today's education**
- Geographic Inquiry and Geographic Information System (**GIS**) **technology are becoming indispensable tools** for education and teaching
- **Governments worldwide stimulate the use of Free Software because it offers freedom:** freedom to learn, to teach; freedom from competition and freedom of speech
- **All the reasons why computer users should use free software also apply to schools...**

“Free” Advantages



- **No licensing costs** can save schools a lot of money that can be spent on more relevant matters
- **Freedom** to use, copy, modify, distribute, get access to the source code
- **Equality** between students and schools, independently of its wealth or dimension
- **Fraternity**, cooperation and mutual aid between users, developers, students and family
- **Citizenship** promotion by teaching students to participate in free software communities
- **Legal education** by eliminating illegal copying practices of proprietary software from schools
- **Independent** students that use free software after they graduate



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“Free” Advantages

- **Knowledge** by learning how software works from reading and changing source code
- **Interoperability** and Open Standards provides the freedom to use any software in schools
- **Diversity** of available free software helps to select the most appropriate for specific needs
- **Quality and security** open source software encourages users and programmers to find bugs and security flaws
- **Longer use and updated** software can run on old and cheaper school hardware, latest improvements are immediately available
- etc...



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associação
ensino livre

Avoid Closed Software

- Schools should refuse to **teach dependence**



Texas Students Track H1N1 Virus

When H1N1 virus began spreading in April 2009, the Texas Education Agency recommended rescheduling or canceling area and state-level competitions in an effort to limit student travel and minimize contact. Some districts halted student travel, and others canceled school classes for weeks.

Penny Carpenter, a geographic information system (GIS) teacher at Lubbock Independent School District, motivate students with relevant real-world topics. H1N1 virus had certainly captured her students' attention; they wanted to learn how approaching events, such as the prom, spring concerts, and even graduation ceremonies, would be affected. Carpenter knew GIS tools would be used to monitor flu outbreaks and inform the public of its pandemic potential. She saw a unique learning opportunity for her students. She began a geographic inquiry that would answer the question, Where are the counties in Texas with confirmed H1N1 virus cases?

Because the outbreak originated in Mexico, students looked for reports for infections in border towns. Maps of countries and states with confirmed flu cases could be located, but students found no maps of Texas counties showing H1N1 virus cases.

The Texas Department of Health's Web site posted a confirmed case count by county and provided daily updates. Students created a list of Texas counties in a spreadsheet and entered the data on confirmed cases. Next, students used the ArcMap application in ArcGIS Desktop to create a basemap of Texas counties. They joined the map's attribute table to the spreadsheet data on county name field. After discussing appropriate breaks for the data range, confirmed cases were mapped using graduated colors.

During the initial analysis, students discovered the darkest colors—representing the highest

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Can You I

The challenge to improve geographic awareness



What would it be like if every day were GIS Day?

Avoid Closed Software

- Schools should refuse to **teach dependence**
- Schools' needs, and the means they require, have to be **kept free from fashion or industry advertising**



Avoid Closed Software



- Schools should refuse to **teach dependence**
- Schools' needs, and the means they require, have to be **kept free from fashion or industry advertising**
- The free software community **rejects the priesthood of technology and knowledge**
- The school **must practice what it preaches** and let students use software whenever and wherever they want
- **Knowledge is universal, Free Software too**
- Free software never goes bankrupt and therefore **does not “destroy” any knowledge**

“Free” Disadvantages



- **Resistance to change** closed software arrived first and is well established in schools
- **Apparent chaos for the newcomer** because of the overwhelming range of free software
- **Lack of ready-made teaching materials** with good support, offered in large quantities by closed software companies
- **Education is a strategic market** for closed software companies and they will not give it up without a fight

“Free” Challenges



- **Promoting a vision** - free software can only have a place in school if teachers, coordinators, heads and authorities understand what Free Software is, and how they can make use of the competitive advantages
- **All teachers should have an opportunity** to be familiar with alternative free software and get all the support they need to use it in classes
- **Create free ready-made teaching materials** by stimulating teachers and others actors to create, cooperate and share with others in producing free educational materials
- **Free Software use in Schools must be stimulated!**

OSGeo - PORTUGAL



- OSGeo Portuguese Local Chapter
<http://wiki.osgeo.org/wiki/Portugal>
 - At SASIG'09 Local Chapter meeting a group of members decided **“Let’s do something about Education!”**
 - The **“Education Workgroup”** was born, with 11 volunteers, a Mission and a Wiki page: [http://wiki.osgeo.org/wiki/Ensino_/_Educação](http://wiki.osgeo.org/wiki/Ensino_/_Educa%C3%A7%C3%A3o)



A screenshot of the OSGeo Wiki page for "Ensino / Educação". The page title is "Ensino / Educação" and it has a "page" tab selected. The page content includes a "Contents" table of contents with sections: 1 MISSÃO, 2 OBJECTIVOS (with sub-sections 2.1 TAREFAS, 2.1.1 Iniciadas, 2.1.2 Sugeridas), 3 VOLUNTÁRIOS, 4 PROJECTOS, and 5 REUNIÕES. Below the table of contents is the "MISSÃO" section, which begins with the text "Desenvolver actividades para incentivar a utilização de Software Aberto SIG no Ensino (Universitário, Secundário e". The page also features a navigation menu on the left with links to Main Page, Community portal, Current events, Recent changes, Random page, and Help, and a search box at the bottom left.

OSGeo - PORTUGAL



- OSGeo Portuguese Local Chapter
<http://wiki.osgeo.org/wiki/Portugal>
 - At SASIG'09 Local Chapter meeting a group of members decided “**Let’s do something about Education!**”
 - The “**Education Workgroup**” was born, with 11 volunteers, a Mission and a Wiki page: [http://wiki.osgeo.org/wiki/Ensino_-_Educaçã](http://wiki.osgeo.org/wiki/Ensino_-_Educa%C3%A7%C3%A3o)
 - Mission: “**To undertake activities to encourage the use of Free GIS Software in Education and Portuguese Schools**”



Education Workgroup



- Education Workgroup activity to date:
 - 9 months old
 - 17 members
 - 8 IRC meetings
 - OSGeo Mailing List

Education Workgroup



- Education Workgroup activity to date:
 - 4 started projects:
 - List of existing case studies
 - Moodle for Teaching Materials
 - Courses Contacts List
 - Writing a paper for press releases
 - Vision promotion in universities' events
 - Coimbra University
 - References in GISVM presentations

Education Workgroup



- Project: **List of existing case studies**
 - Community inquiry using a Google Form

Inquérito: Uso SASIG no Ensino!

Se utiliza Software Aberto SIG (SASIG) no Ensino, por favor descreva aqui o seu caso e ajude-nos a promove-lo! Esta lista será posteriormente publicada no WIKI da OSGeo: http://wiki.osgeo.org/wiki/Ensino/_/Projectos/_/Ensino_com_SASIG

Muito obrigado pela sua colaboração!

*Obrigatório

Instituição *

Nome da Instituição de Ensino

Curso *

Nome do curso onde utiliza o SASIG

Disciplina *

Nome da disciplina onde utiliza o SASIG

Contacto *

Nome / email de contacto

The screenshot shows a Google Docs spreadsheet titled "Inquérito" (Survey) with a table of case studies. The table has columns for Institution, Course, Discipline, Contact, and Software. The data is as follows:

	B	C	D	E	F
	Instituição	Curso	Disciplina	Contacto	Software
1					
2	Universidade dos Açores	Biologia	Gestão do Ambiente	amonizm@gmail.com	gvSIG
3	ESTGA	CET em SIG	Plataformas Open Source	António José Silva ajfsilva@gmail.com	QGIS, postgres/postGIS, Kosmo, GeoServer, MapFish, OpenLayers, gvSIG, udig
4	Universidade dos Açores	Licenciatura em Guias da Natureza	Espeleologia e Montanhismo	dinisacores@sapo.pt	DNRGarmin, Google Earth, FGIS
5	FLUP	Geografia	SIG	goncalves.gloria@gmail	
6	Universidade dos Açores	Eng. Civil / Arquitectura	Ordenamento do Território	António Moniz / amonizm@gmail.com	gvSIG

Education Workgroup



- Project: **List of existing case studies**
 - Community inquiry using a Google Form
 - Public list on OSGeo Wiki

The screenshot shows a Wiki page titled "Lista de Casos de Ensino com SASIG". The page includes a navigation menu on the left, a search box, and a table with two rows of case studies. The table columns are: Instituição, Curso, Disciplina, Contacto/email, Software, Descrição/Objectivo, Observações, and Vantagens.

Instituição	Curso	Disciplina	Contacto/email	Software	Descrição/Objectivo	Observações	Vantagens
ESTGA-UA	CET em Sistemas de Informação Geográfica	Plataformas Open Source	António José Silva	Vários*	Pretende-se dar a conhecer o movimento open source e tirar partido das suas vantagens. São utilizadas em concreto algumas das tecnologias associadas a este movimento, devendo os formandos instalar e manipular uma solução open source integrada: SIG, base de dados e servidor web.	Este curso encontra-se na primeira edição e ainda está em funcionamento.	...
ISEGI-UNL	Mestrado em Ciência e Sistemas De	Geospatial Free Open Source	Jorge Gustavo Rocha	Vários*	O principal objectivo desta disciplina é a compreensão das propriedades específicas, qualidades e fraquezas do Software Livre e de Código		...

Education Workgroup



- Project: **List of existing case studies**
 - Community inquiry using a Google Form
 - Public list on OSGeo Wiki
 - Total of 12 case studies
- Objective: **to promote public visibility and stimulate national networking**

Education Workgroup



- Project: **Moodle for Teaching Materials**
 - E-learning platform <http://edu.sigaberto.org>

Formação SIG baseada em Software Aberto

Nome de utilizador: Nelson Silva. (Sair)
Português - Portugal (pt)

Administração do Sítio

- Utilizadores
- Disciplinas
- Notas
- Página principal
- Relatórios

Menu principal

- Notícias

OSGeo
Your Open Source Compass

Bem-vindos ao site de e-learning do Capitulo Português da OSGeo.

Este espaço tem como objectivo, dar apoio às actividades pedagógicas a promover por este capítulo.

Para mais informação, por favor contactar osgeo_pt@sigaberto.org

Grupos de disciplinas

Workshops SASIG2
Introdução ao Mapserv

SIG Desktop
gvSIG em 3 Lições

WebGIS

Bases Dados Geográfica

Áreas temáticas

Universidade do Minho
MSc Ordenamento e Valorização de Recursos Geológicos

Procurar disciplinas: Executar

Activar modo edição

Calendário

Agosto 2010

Dom	Seg	Ter	Qua	Qui	Sex	Sab
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31				

Actividades

- Fóruns

Nome de utilizador: Nelson Silva. (Sair)

moodle

Education Workgroup



- Project: **Moodle for Teaching Materials**
 - E-learning platform <http://edu.sigaberto.org>
 - Sample content ‘**learn gvSIG in three lessons**’

A screenshot of a Moodle course page titled "gvSIG em 3 Lições". The page is in Portuguese and shows a course overview for "gvSIG01". The main content area contains a welcome message and a list of topics. The left sidebar contains navigation menus for "Pessoas", "Actividades", "Procurar nos fóruns", "Administração", and "Grupos de disciplinas". The right sidebar contains "Últimas notícias", "Próximos eventos", and "Actividade recente".

gvSIG em 3 Lições

Nome de utilizador: Nelson Silva. (Sair)

Edu@SIGAberto ▶ gvSIG01

Assumir o cargo de... Activar modo edição

Pessoas

- Participantes

Actividades

- Fóruns
- Recursos
- SCORMs/AICCs

Procurar nos fóruns

Executar

Pesquisa avançada

Administração

- Activar modo edição
- Configurações
- Atribuir cargos
- Notas
- Grupos
- Cópia de segurança
- Restaurar
- Importar
- Reiniciar
- Relatórios
- Perguntas
- Ficheiros
- Perfil

Grupos de disciplinas

- Workshops SASIG2
- SIG Desiknn

Lista de tópicos

Seja bem vindo ao workshop de iniciação ao software Open Source gvSIG.

Pretende-se assim introduzir os formandos no ambiente gráfico gvSIG, um software de Sistemas de Informação Geográfica (SIG) de carácter livre, o qual pode ser redistribuído e modificado ao abrigo de uma licença GNU General Public Licence (GPL), fornecendo assim as funcionalidades básicas para manipulação, tratamento e visualização de dados geográficos nos formatos vectorial e raster.

Cada lição é composta por um conjunto de slides e exercícios práticos.

No final, o formando estará apto a:

- Criar um projecto gvSIG e a configurar as suas preferências pessoais
- Carregar dados cartográficos e proceder à sua representação
- Explorar as potencialidades do software na manipulação de dados alfanuméricos
- Criar saídas gráficas para apresentação dos seus dados

Não será contemplada a instalação do software. Para mais informação acerca do software e instruções de instalação, consulte o endereço <http://www.gvsig.gva.es>

Qualquer dúvida, por favor utilize o fórum técnico.

Forum técnico

Noticias

1 Primeiros passos com o gvSIG

- Lição 1
- Exercício 1
- Conteúdos da Lição 1

Últimas notícias

- Começar um novo tema...

(Ainda não foram publicadas notícias)

Próximos eventos

Não há eventos próximos

Ir ao calendário...
Novo evento...

Actividade recente

Actividade desde Domingo, 22 Agosto 2010, 10:03

[Relatório completo de actividade recente...](#)

Sem novidades desde o seu último acesso

Education Workgroup



- Project: **Moodle for Teaching Materials**
 - E-learning platform <http://edu.sigaberto.org>
 - Sample content '**learn gvSIG in three lessons**'
 - Objective: **to stimulate Free Teaching Materials creation** by making a public infrastructure with examples available

Education Workgroup



- Project: **GIS Courses contact list**
 - Community inquiry using a Google Form

Listagem_Contactos_Universidades_Politécnicos

Com este formulário, o Grupo de Trabalho de Ensino/Educação do Capítulo Português da OSGeo.org, pretende construir uma lista, o mais exaustiva e actualizada possível, dos cursos e docentes que leccionem SIG ou utilizem ferramentas SIG no Ensino em Portugal. Esta lista será utilizada para divulgação de acções promovidas pelo Grupo e outras informações de relacionadas e será disponibilizada publicamente numa página WIKI da OSGeo. Ao introduzir esta informação está concordar com a utilização atrás descrita. Por favor, certifique-se que caso esteja a disponibilizar informações relativas a outras pessoas, estas concordem com a sua divulgação.

*Obrigatório

Instituição *

Curso *

Google docs Listagem_Contactos_Uni Qualquer Updated 4 days ago by ricardodepinho Guardado Partilhar

Ficheiro Editar Visualizar Inserir Formatar Formulário (14) Ferramentas Ajuda

Fórmula: Carimbo de data/hora

	A	B	C	D
	Carimbo de data/hora	Instituição	Curso	Disciplina
1				
2	2010/06/08 12:04:19	ISEGI-UNL	Gestão de Informação	Ciência da Informação Geográfica; Geospal Mining
3	2010/06/08 12:22:49	ISA/UTL	Engª Agronómica, Engª do Ambiente, Engª Florestal e Arquitectura Paisagista	Geomática
4	2010/06/08 12:24:03	Universidade Lusófona de Humanidades e Tecnologias	Licenciatura em Geografia e Desenvolvimento http://www.ulusofona.pt/index.php/pt/ensino/faculdades-escolas-e-institutos/fauga/licenciaturas-1o-ciclo/3980-1o-ciclo-geografia-e-desenvolvimento Curso de Especialização Tecnológica em Sistemas de Informação Geográfica (Coordenação) http://www.ulusofona.pt/index.php/pt/ensino/faculdades-escolas-e-institutos/fauga/cursos-de-especializacao-tecnologica/5427-sistemas-de-informacao-geografica	Várias
5	2010/06/08 12:24:07	ISA/UTL	Todos os do 2º ciclo (opcional)	Sistemas de Informa Geográfica
6	2010/06/08 12:27:19	Universidade Coimbra	Geografia, área especialização em Ordenamento do Território	Geografia

Inquerito contatos Carimbo de data/hora

Education Workgroup



- Project: **GIS Courses contact list**
 - Community inquiry using a Google Form
 - 70 contacts
 - Objective: **to provide a contact list for Workgroup public announcements, and help it reach teachers interested in migration**

Education Workgroup



- Project: **Write an article for press releases**

- Create a free editable Google Doc for producing an article explaining the Workgroup's Mission

A screenshot of a Google Docs document. The document title is "Artigo-Software Aberto". The author is "ricardodepinho@gmail.com". The document is updated on 30/03/10 at 23:49 by Nilo Nilo. The document content includes a list of co-authors: Adnilo Chande, Artur Gil, Nelson Silva, Ricardo Pinho. A yellow highlighted note says: "(Pede-se ajuda a todos na redacção deste Artigo, quem colaborar deverá colocar o seu nome na lista de co-autores acima, por ordem alfabética.)". The main title of the article is "ARTIGO SOBRE - 'SOFTWARE ABERTO SIG NA EDUCAÇÃO'". Below the title is a section titled "Índice:" with a list of items: I. ARTIGO SOBRE - "SOFTWARE ABERTO SIG NA EDUCAÇÃO" with sub-items: i. Objectivo do Artigo: "Esclarecer sobre a necessidade de uso de SASIG na Educação"; ii. Estrutura do Artigo: i. O que é o SASIG; ii. O porquê do uso de SASIG na Educação?

Education Workgroup



- Project: **Write an article for press releases**
 - Create a free editable Google Doc for producing an article explaining the Workgroup's Mission
 - Objective: **to encourage involvement by writing an article promoting the Workgroup initiative, in magazines, newspapers, etc**

Education Workgroup



- **Vision promotion at universities**
 - Coimbra University (Oldest Portuguese Univ)



Education Workgroup



- **Vision promotion at universities**
 - Coimbra University (Oldest Portuguese Univ)
 - Simulated class using FOSS4G with GISVM



Education Workgroup



- **Vision promotion at universities**
 - Coimbra University (Oldest Portuguese Univ)
 - Simulated class using FOSS4G with GISVM
 - References in several GISVM presentations: SASIG2, Porto University (FCUP), Inst. Politécnico Leiria, Inst. Politécnico de Tomar, etc
 - Objective: **to present and explain the Free Software Alternative and Advantages for School Teachers, Directors, Students, etc.**

Case studies



FOSS4G 2010 *Barcelona*

- More than **12 Portuguese Case Studies** obtained through a community inquiry



Case studies

- **“Open Source Tools for Spatial Ecological Modeling”** (spatial-ecology.net project)
 - **By Amatulli G. and Casalegno S.**
 - **Univ. Zaragoza (Spain):** “Master GIS Remote sensing” for the year 2009 and 2010
 - **Univ. Basilicata, Potenza (Italy):** “International Doctoral School: Crop Systems, Forestry and Environmental Sciences”, 2010
 - **Univ. Copenhagen (Denmark):** “Forest and landscape Summer School”, 2010
 - sept 2010, **FAO Tanzania** for local GIS managers!



Case studies

- “Open Source Tools for Spatial Ecological Modeling” (spatial-ecology.net project)
 - **Giuseppe and Stefano** have learned to use the **FOSS4G COMPETITIVE ADVANTAGES** for teaching and they have been achieving great success!
 - By using **GISVM** (GIS Virtual Machine) as a teaching tool, they offer students (Windows users) an **easy transition to Free Software** and the **freedom to take the full working environment of the course to run on their personal pc**, and thereby **making the continuation of self-learning easier!**



Future



- Future Education Workgroup plans:
 - To continue and improve the existing projects
 - To participate in more university events
 - To promote special courses for teachers
 - To collaborate more closely with “Ensino Livre” (Portuguese Association for “Free Education”)
 - To always be open to suggestions from the community!

Thank you!



- All members of the OSGeo-PT Education workgroup, specially to the more active members: Adnilo Chande, Artur Gil, Nelson Silva...
- Stefano Casalegno & Giuseppe Amatulli