

Use Intute Integration tools to personalise your Intute experience! How to ensure you retrieve relevant Web content for academic studies and research in veterinary medicine

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Abstract

This paper explores the role of Web 2.0 tools and services in veterinary education, and in particular Web 2.0 developments by Intute, a free UK Higher Education Internet service providing access to the 'Best of the Web' for students, academics, researchers and practitioners. Web 2.0 technologies are changing the way veterinary students and academics access educational content on the Web and the Intute suite of Web 2.0 tools can help students and academics make sensible and considered use of Web 2.0.

Using the Internet for academic study raises many issues, including accuracy, relevant content, the plethora of information, not enough time to find the 'information rich' Web resources, yet at the same time academic standards must not be compromised. For some, the Internet is the way forward for teaching and learning and delivering academic content on the Web. Web 2.0 technologies are a useful way of exploiting student's enthusiasm for interactive and online tools, whilst at the same time we need to ensure that the Web resources are relevant and authoritative.

This paper discusses the Intute integration project and how it allows users to exploit its resources and services within the context of their own websites and Virtual Learning Environment (VLEs). Discussed is the technical functionality supporting the project, Intute personalisation and integration options and tools (which include embedding the Intute search box, and RSS feeds), project results (including take-up and institutional exemplars), and conclusions on the use of this sort of Web 2.0 tool within an educational environment.

The Internet and Web 2.0

Invented in 1990 by Tim Berners-Lee, a scientist at CERN (the European Organization for Nuclear Research), the World Wide Web is a powerful information resource and an increasing amount of websites and information is available online. In March 2009 a survey by Netcraft (1) estimated that there are more than 200 million websites and data compiled by Internet World Stats (2) shows growth in Internet usage in all regions of the world with an increase of 342 percent between 2000 and 2008. For Higher Education the Internet offers valuable resources, alongside 'traditional' academic publications. However, finding high quality authoritative Web resources on the Internet that can support research can be time-consuming and frustrating.

The concept and term 'Web 2.0' initially outlined by O'Reilly (3) identifies certain features that have come to be associated with 'social software' technologies; amongst these is user participation, user as contributor, harnessing the power of the crowd, and rich user experiences. The user-centric aspect is an important feature of any Web 2.0 service and

application, and its participatory and dynamic nature facilitates communication and collaboration. Some well-known Web 2.0 services and applications are:

- Blogs (for e.g. <http://www.veterinaryradiology.net/>)
- Wikis (for e.g. <http://www.vetnurse.co.uk/wikis/veterinary-nurse/default.aspx>)
- Social Bookmarking and tagging (for e.g. <http://delicious.com/>)
- Podcasting (for e.g. <http://www.rvc.ac.uk/review/Podcasts/>)
- Multimedia sharing (for e.g. <http://www.youtube.com/sgulcso>)
- RSS and syndication (for e.g. http://www.avma.org/news/info_rss.asp)
- Social networking - including professional networking (for e.g. http://www.2collab.com/subject?field_id=3400)
- Aggregation services (for e.g. <http://www.netvibes.com/>)
- Data mash-ups (for e.g. <http://www.spatialepidemiology.net/>)

Many veterinary students are already familiar with and frequently use social networking and interactive Web services for their personal use, the increased usage of resources such as Facebook, MySpace, Flickr, YouTube, Delicious, Twitter is well documented. The scholarly use of Web 2.0 tools and applications raises many issues for the veterinary educational community, but many of the projects listed in this paper are actively making use of Web 2.0 technologies and ideas which have the potential to connect students and academics in an educational context. The important issues of authority, provenance, intellectual property, validity, identity, and quality control have all been considered by these educational services and projects.

Intute

Intute (4) is a **free** academic information service providing access to the very best Web resources for education and research and is funded by the Joint Information Systems Committee (JISC) (5). Intute is a portal of annotated links to internet-based resources and currently (April 2009) contains more than 126, 000 evaluated Web resources. Intute offers a subject-focused internet search tool for those working in academia.

Subject areas covered include the health and life sciences; arts and humanities; social sciences; and the physical sciences and engineering. All material included in the service is selected and evaluated by a UK network of subject specialists, and those resources falling within the health and life sciences subject areas, are evaluated according to established evaluation criteria (6).

The health and life sciences subjects covered include clinical medicine and dentistry; biological sciences; nursing, midwifery and allied health; **veterinary medicine**; history of medicine; bioethics; public engagement with science; and agriculture, food and forestry. Intute: Veterinary Medicine (7) is the subject gateway for students, academics, practitioners and researchers with an interest in veterinary medicine and animal health. The types of Web resources evaluated and included for their relevance to the veterinary curriculum include teaching and learning materials, documents and reports, image banks, interactive tutorials, grey literature, practice guidelines,

Users of Intute can either search or browse resources and access is provided to both subject-specific and cross-subject resources, an important feature for interdisciplinary studies. The internet resource catalogue (IRC) is the main service provided by Intute, but other value added services and internet training resources are also available, and these include the Virtual Training Suite (VTS), Intute Informs, and the Intute Repository Search (IRS).

Intute keeps a watching brief over Web 2.0 technologies and engages users in a variety of ways. It has developed a collection of community tools, which include blogs, RSS feeds, user reviews/comments and ratings of Intute catalogue records, site suggestions for inclusion in the IRC, an Intute Facebook page. We are experimenting with Twitter, and an Intute Twitter channel for agriculture <http://twitter.com/intuteagric> was launched recently.

Intute Virtual Training Suite

The Intute Virtual Training Suite (8) is a collection of internet training tutorials for over 65 subject areas, including veterinary medicine, microbiology, and the biological sciences. Each tutorial covers internet search and research skills for a different subject, covering most of the subjects taught in UK universities.

Intute Informs

Intute Informs (9) is a flexible adaptive tool for the creation of interactive online tutorials. It consists of easy to use software and a database of tutorials. These tutorials have been created by users as a shared community resource, which can be re-used by other registered users to facilitate creative collaboration.

Intute and the Web 2.0 experience

According to Wickham Web 2.0 technologies are changing the way people use the internet, both to **create** and **access** information (10). Intute can help students identify relevant academic content, but the emergence of Web 2.0 technologies creates interesting challenges and implications for Intute, especially when developing a product which uses Web 2.0 features to engage users, whilst retaining authority and credibility. Intute responded by developing a variety of integration services which offer **flexible** ways of delivering its educational content to users.

Intute Integration – suite of tools

The Intute Integration project (11) began in March 2006 and it enables users to pull Intute content into their own Web pages. Maintaining subject guides of internet resources, collections of Web links placed in course websites requires a considerable amount of time and maintenance effort by staff, the Intute integration services removes the need for this.

Institutions can re-use Intute content in their own online services, and there is a range of flexible **free** methods of integration, varying in complexity. Some are simple and are of use to those with knowledge of writing Web pages, whilst other methods require systems administrator rights and more advanced technical knowledge.

The various methods of integrating content offered are:

1. Simple links to Intute or the Virtual Training Suite
2. Newsfeeds
3. Intute Lite – a search box for the catalogue
4. Intute Include – a more ‘sophisticated’ search box
5. MyIntute – the personalisation/customising service
6. Contributing resources to Intute
7. Intute OpenSearch plugin
8. OAI repository access
9. Cross searching

1. **Simple linking** – a link to the main Intute website, or to a section of it. The United States Department of Agriculture National Agricultural Library, for example, has a simple link to the Intute: Veterinary Medicine home page.

2. **RSS Newsfeeds** - there are more than 100 newsfeeds available, providing alerts to new resources added to the catalogue, general and subject news from Intute, and blog feeds.

3. **Intute Lite** – the Intute search box can be put into a Web page, and from there it is possible to search the whole Intute catalogue, or, if preferred, just a section of it. This can be done by adding some HTML or optional JavaScript, which can be copied from the Intute web site. This is useful as the results can be made to fit in with an Institutional ‘look and feel’. This method is suitable for those who have knowledge of editing Web pages.

4. **Intute Include** – this is a more sophisticated method and requires a Web administrator to install some simple software on the local Web server. This will send your users’ searches to Intute and output the results it receives in your local style – users do not leave your website’s domain to search Intute. This is useful as the results can be made to fit in with an Institutional ‘look and feel’. The University of Exeter Library, for example, has used Intute Include, see Figure 1.

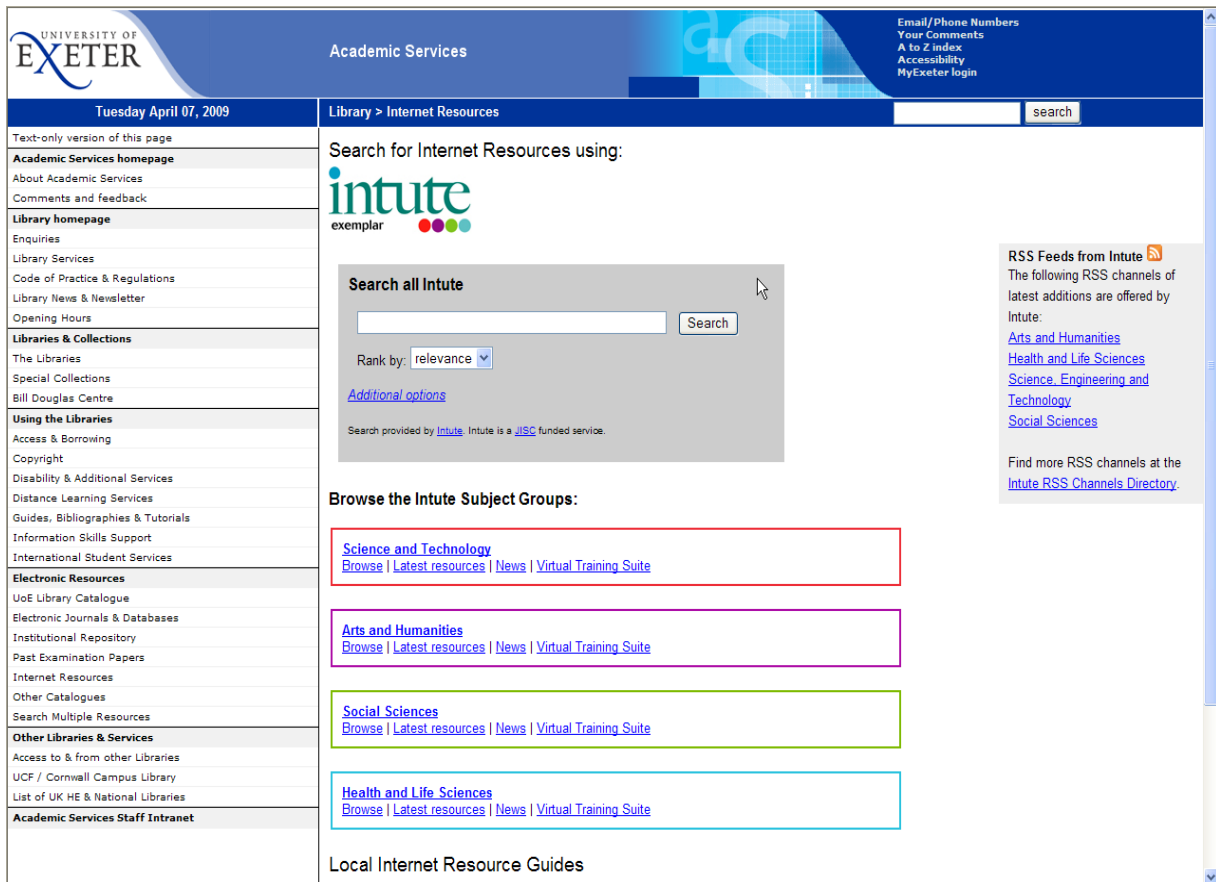


Figure 1: A screenshot of University of Exeter Library service search for internet resources using Intute Include.

5. **MyIntute** – provides a personal secure workspace on Intute, where users can manage Intute and non-Intute websites and **tag** them. These can be **exported** via email, RSS, HTML or JavaScript, to a Web page or VLE. A useful method for lecturers to create reading lists for students, or lists of recommended websites. Librarians and information professionals could use MyIntute to list the key websites for a particular subject on their subject pages. The JavaScript export method updates the Intute record descriptions automatically, thus saving lecturers and librarians' time and effort, no link checking required. Users can also save their Intute searches and set up email alerts so they are notified when new content is added to the Intute catalogue. See Figure 2 for an example of a MyIntute home page, with tag cloud.

Welcome Laurian Williamson

The screenshot shows the MyIntute homepage for user Laurian Williamson. At the top, there are navigation tabs for Records, Notes, Searches, Subjects, and Profile. Below these, the user's login history and statistics are displayed: Last Login : 2008-12-05, 3 Saved subjects, 10 Saved searches, 156 Records in your permanent collection, and 0 Temp records collected this session. A section titled 'Tags for Intute records' contains a tag cloud with the following tags: [no tag], bees biology, biology societies, biology teaching, materials calf disease cancer, catering diabetes equine stuff feline mrsa, mvts royal societies stem cells teaching, resources teaching materials uk vet derm, vet schools Vet Teaching, and Resources Vet Teaching Resources.

Figure 2: Example of MyIntute homepage, with tag cloud

6. Contributing resources to Intute – Intute welcomes input from users and they are encouraged to submit Web resources for evaluation and possible inclusion into the service. This is done by an online submission form and Intute staff will review suggestions and add them if they are appropriate and fulfil the evaluation criteria.

7. Intute OpenSearch plugin – this feature allows the user to add the Intute search box to a browser toolbar. OpenSearch (12) is a collection of simple formats for the sharing of search results across the Web.

8. OAI repository access - Intute provides access to its resources via an OAI-PMH repository (ref)

9. **Cross searching** - Intute offers a single Z39.50 target for all Intute database records.

Intute Integration – case study

Leeds University library was one of the first to use Intute integration in a consistent way. Leeds wanted to offer up-to-date, quality content on their subject pages, without having to maintain it themselves. They had used ROADS (13) software previously and Intute integration seemed like a natural progression. Subject librarians in education, law, engineering, dentistry and East Asian studies agreed to test it out.

Minor technical and cataloguing problems have generally been overcome and overall it has been a success. They now use MyIntute, the search box and newsfeeds on their pages. Martin Gill, Faculty Team leader, said 'MyIntute has offered us an easy and effective way of promoting quality assured websites to our students.'

Intute Integration - exemplars

Intute have developed the exemplar scheme for those institutions who have integrated Intute across their website or portal in a comprehensive and consistent way. This is an incentive to institutions to integrate and spread good practice amongst the Higher Education community. For example, a library may have added the Intute search box to all its pages which list subject resources. Examples of this include the City of Bristol College, the University of Leeds Library service (as shown in the previous case study), and the Animal Health Information Specialists (UK & Ireland).

The screenshot shows the AHIS (UK & Ireland) Animal Health Resources website. On the left, there is a navigation menu with links: Home, About Us, Membership, Publications, Conferences & Events, Veterinary Schools, and Animal Health Resources. Below the menu is a search box with the text 'Search Intute animal health resources (Opens in new window)' and a 'Go' button. The main content area is titled 'AHIS (UK & Ireland) Animal Health Resources' and features the Intute logo. Below the logo, it says 'Latest Internet resources added to Intute: Health and LifeSciences veterinary gateway'. The Intute: Health and Life Sciences presents the 15 most recent Webresources for education and research added to our veterinary gateway. The resources listed are:

- Veterinarians without Borders**: This is the homepage of Vétérinaires Sans Frontières (Veterinarians without Borders). Their aim is to develop livestock keeping and improve veterinary medicine to improve living conditions in developing countries. The website gives information on current projects and education information. Press releases are available as well as information on making a donation and volunteering.
- Ruminant nutrition project, The (RUMNUT)**: RUMNUT is a commercial UK software package based on ARC data, which formulates rations from a large database of dietary ingredients. Four different models are available: dairy cows, beef cattle, suckler cows and sheep. Designed for use by animal production professionals, including farmers, feed company personnel, veterinary surgeons and agricultural consultants this website provides a link to the program and gives information on courses and consultancy available. A free evaluation version of the program is available online, together with ration formulation tables and Excel spreadsheets for dairy cows.

Figure 3: An example of an Intute Intute Integration exemplar

Further detailed information on methods of Intute integration and integration exemplars are provided on the Intute integration website (11). There is a range of user support materials available including Quick Guides, downloadable logos and graphics.

Intute Integration usage

Intute monitors usage of their integration tools via desktop research. The Integration project has been successful in increasing the number of UK Higher Education Institution's

linking to Intute – from 66 percent in October 2007 to 85 percent in May 2009. Currently the most popular method of integrating was a simple link to Intute or the VTS; the reasons for the popularity of a simple link are not known but Joyce (14) states that it seems likely the reason for this is that simple linking is the easiest and quickest method to use. Latest results are:

February – May 2009

Simple link to Intute	85%
Intute in federated search	15%
Intute search box	9.6%
Intute newsfeeds	5.6%
MyIntute	2.0%

Intute Integration - new developments in 2009

Interest in the Intute integration tools was building among those developing Virtual Learning Environments (VLEs). However, not all the tools were functional in this context. For example, RSS feeds worked fine but it was not possible to embed the search box. Therefore, we began to look at how a search client could be created that would work with the most popular VLE, Blackboard. Blackboard is a Java-Servlet system for which it is possible to write third party tools called Building Blocks. We have so far created a beta version of a simple Building Block which allows Blackboard users with administrator rights to perform searches on Intute and page through results, as is possible with the Intute Include system.

In March 2009, JISC (5) issued a call for bids under its Rapid Innovation Grants for short technical projects lasting six months. Intute, in partnership with the Universities of Bath and Durham, has submitted a proposal to develop plug-ins for the two most used VLEs in the UK (15): Blackboard and Moodle. They aim to deliver the following functionality:

- The ability to perform basic and advanced searches of the Intute catalogue from within the VLE
- A reading list facility for course writers that will allow them to select links to and descriptions of resources from Intute and embed these into course content to produce recommended reading lists for students. The project will explore whether it is possible to for these to be updated automatically when changes are made to the Intute catalogue.
- A reading list facility for students that will allow them to embed links to and descriptions of resources they select from Intute into their personal working environment.
- The ability to save searches into personal accounts.

The result will be known in early June 2009.

Examples of the use of Web 2.0 tools and features in Veterinary Medicine

Bertolo noted in 2008 that the use of Web 2.0 applications in bioscience teaching is mainly restricted to pockets of good practice (16) and that effort and time are important factors

which educational institutions need to consider if Web 2.0 applications are to fulfil their true potential as teaching tools. The veterinary education community (academics, librarians and information professionals) have developed several collaborative projects, some of which use Wiki-style technology and other Web 2.0 features. Here is a small sample of the type of innovative projects and services making use of Web 2.0 technologies.

1. WikiVet

WikiVet (17) is a good example of the veterinary community embracing Web 2.0 technologies to support education. Using Wiki-style technology ('mediawiki' the same software as used for Wikipedia) this collaborative initiative between UK veterinary schools, facilitated by the UK Higher Education Academy (18) was launched in October 2008. WikiVet (Figure 2) content relates specifically to the veterinary curriculum and all site content has been authored by vets and students and is peer-reviewed by subject specialists. Access to the site is restricted to the veterinary community, therefore restricting the general public being able to view or edit the content.

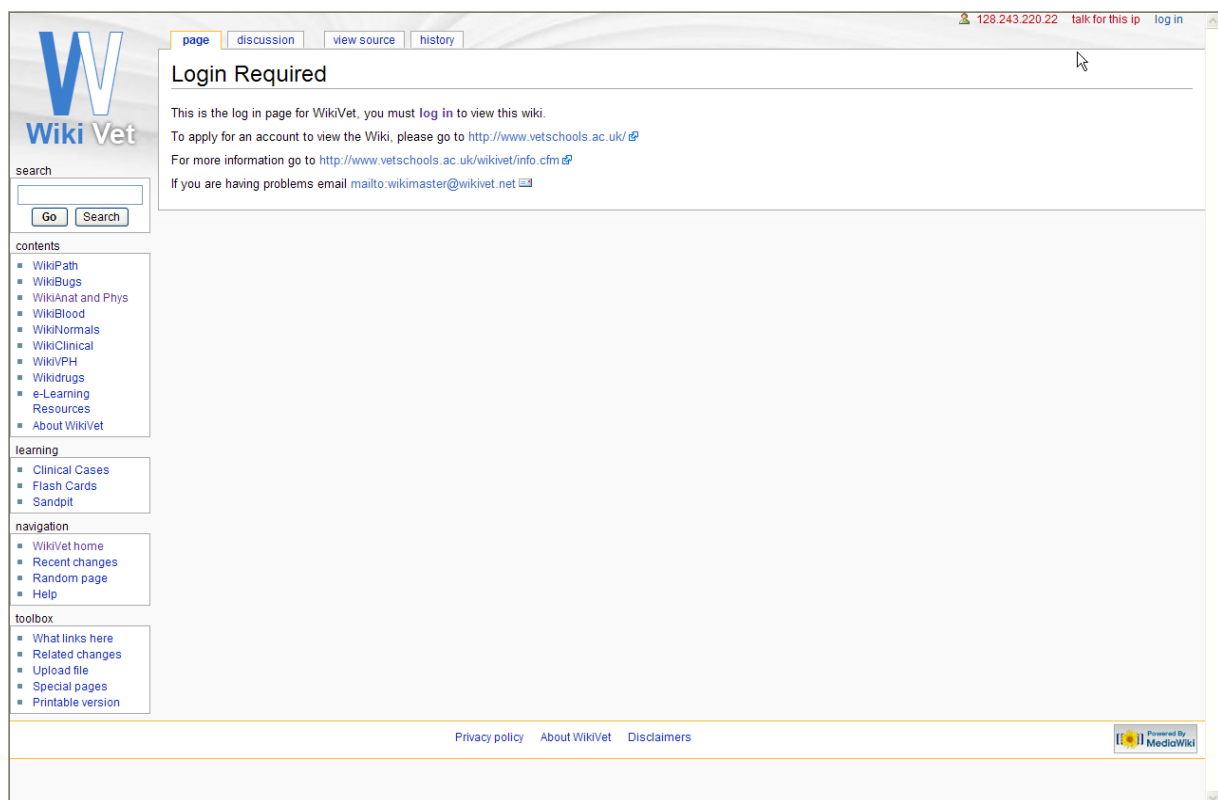


Figure 4: WikiVet home page screen shot

2. Internet search tools and services


The Veterinary Science swicki (19) is a collaborative veterinary social search engine produced by the company Eurekster, Inc. A 'buzz cloud' of hot and frequently searched terms is a feature of this search engine.

ViFa Vet (20) is a virtual veterinary library providing an array of tools and services. Includes a veterinary search engine, a veterinary buzz cloud of terms – see <http://elib.tiho->

hannover.de/virtlib/projektbesch-e.htm, a downloadable tool bar, and a selection of RSS feeds from veterinary organisations. Available in both English and German.

Vetseek (21) is a search engine focussing on veterinary science and related topics. It searches for veterinary related from the World Wide Web and also the 'deep-web'. Made available by Freie Universitaet Berlin.

3. RSS (Really Simple Syndication) in veterinary medicine

Many veterinary medicine and animal health websites provide an email alerting/update facility, but increasingly there is the option to put together a customised list of news and information using RSS (Really Simple Syndication) news feeds. Many websites have added special code that permits RSS news readers (also called RSS aggregators) to pick up the new content added to a website. By signing up with a news reader (a range of different news readers are available for different operating systems) and choosing the sites from which you want to get news. Web sites offering this feature are normally identified by the RSS lozenge .

Receiving the latest headlines and resources in one place, as soon as they are published, without having to visit the websites you have taken the feed from, saves time especially when several hundred websites have to be monitored. Let the news come to you! An example of a commercial veterinary news service is 'Veterinary News from Medical News Today' <http://www.medicalnewstoday.com/rss/veterinary.xml> produced by MediLexicon International Ltd. This service provides independent, authoritative and unbiased news from thousands of international sources. Veterinary Schools also provide RSS news feeds, for example the College of Veterinary Medicine at the University of Illinois at Urbana-Champaign provide an RSS feed for their 'Pet Column' service, a service providing authoritative pet health information for animal owners on a range of issues, authored by experts from the College of Medicine.

Conclusions

There is great potential for further integration of Intute content. Intute needs to do more research and find out how integration is being carried out and possible ways of making it simpler to integrate Intute content in order to encourage users to make use of our content and increase uptake.

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