

Lexaurus helps the National Strategies open the gateway to teaching resources



The National Strategies are professional development programmes for early years, primary and secondary school teachers, practitioners and managers. Provided by Capita Strategic Children's Services, on behalf of the Department for Children, Schools and Families (DCSF), these programmes are one of the Government's principal vehicles for improving the quality of learning and teaching in schools and early years settings, and in raising standards of attainment.

Over the last decade the National Strategies have amassed a vast collection of resources for education professionals, which are delivered through the DCSF Standards website. In a recent review of this website it became clear that delivery and discovery of content across all key stages and subjects was required, aimed at a wide variety of audiences and covering important educational purposes and initiatives. The creation of a new delivery mechanism centred on a strong, topic-based information architecture was necessary. In order to deliver such an architecture it was essential to build an infrastructure that allowed for the creation, management, delivery and discovery of well-defined and tagged content.

The National Strategies selected *Vocabulary Management Group (VMG)* and their implementation partner *Knowledge Integration* to deliver a best-in-class solution.

Designing the architecture

The challenge for the National Strategies was considerable: content from around 20 websites and micro-sites, amounting to around 16,000 pieces of content and assets, needed to be analysed and repurposed in the new website. Development plans for the new site architecture were based on three guiding principles:

- Content would be comprehensively tagged by people with professional insight.
- Metadata vocabularies needed to centre on topics drawn from across the whole range of interests of the National Strategies.
- A rules-based navigation and information discovery mechanism would be employed in which content options would be determined by how users navigated the site.





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In order to facilitate the high degree of customisation necessary to achieve this level of sophistication, the National Strategies chose the open-source Drupal CMS for its content management system (CMS). Drupal provides a strong framework for development, a ready supply of programmers with relevant expertise and access to a world-wide community of supportive developers.

Individual, bespoke mechanisms for managing content tagging, vocabulary management and rules-based navigation were also considered, but to minimise future migration difficulties the National Strategies instead opted for a solution proposed by VMG that could provide all of this required functionality through an open-architecture product set specifically designed for this purpose.

The Vocabulary Management Group's Lexaurus product suite's use of open standards, and in particular the well-established Zthes standard for vocabularies, would enable the new site to share vocabularies and access to resources with other information services, supporting the growth of a flexible and distributed information network across UK education.

Much of the development work involved in creating the National Strategies site focused on the interfaces used by Drupal to communicate with various VMG and Knowledge Integration tools: the Lexaurus vocabulary editor and server, and the assistive tagging tool.

The project team faced a challenging schedule. The sheer quantity of work involved in tagging 16,000 pieces of content meant that the development team had to progress on several fronts at once, without a complete information architecture for classification and navigation being in place. Each piece of content was therefore tagged as objectively as possible and as different parts of the classification and navigation systems fell into place, the content was re-worked as needed. This agile development approach was helped by the design of the Lexaurus tools. Kristin Cooper, Content Manager for National Strategies, comments: “Our work practice, combined with the Lexaurus and Knowledge Integration tools, meant that our remote team could identify the need for a new tag in a vocabulary, apply it to the tagging tool, and have it available to them across the network within 10 minutes”.



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VMG worked closely with the National Strategies architecture and content teams to customise tools and provide implementation advice. During the project's first six-months, the specially developed metadata tagging tool underwent radical development in order to meet the very demanding requirements of the project. Kristin Cooper believes that the willingness of VMG to actively develop and integrate this customised component with the CMS and the Lexaurus terminology tools was a critical success factor. "Our project had very specific requirements and needed to meet some very tight deadlines, so VMG's flexibility to adapt their solution quickly was of great benefit" she added.

Building vocabularies

VMG's Lexaurus Editor was a pivotal tool in the development of the taxonomic architecture, providing a simple yet sophisticated working environment that radically accelerated vocabulary development.

Around 40 topic-based vocabularies were created for the site. Some of these were very simple, such as the collection of English regions. Others were more complex, such as the Integrated Public Sector Vocabulary. Where vocabularies already existed, these were used with little or no modification.

Lexaurus Editor was also crucial in providing a straightforward mechanism for creating and managing the rules that drive both navigation and cross-classification. Lexaurus Editor served two overall purposes: management of vocabularies and, unusually, development of the navigation architecture for the website. Topic-focused Zthes files exported from the editor were ingested via the Lexaurus Bank vocabulary server into the tagging tool for use in assistive tagging of content.

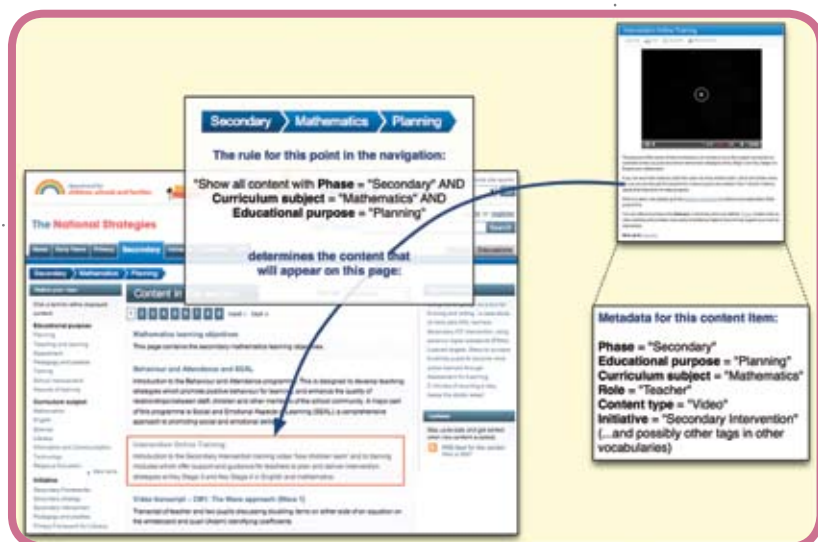
A good example of this cross-classification is the Initiative vocabulary, which is used to capture information about National Strategies initiatives. Several initiatives are specific to a curriculum subject and phase of education, such as the "Talk for Writing" initiative aimed at primary literacy teachers. "Primary", "literacy" and "teachers" are all terms found in other vocabularies. So a rule was created so that when the "Talk for Writing" initiative term is selected, the corresponding terms in the other vocabularies are also selected. In a similar way rules can be used to exclude terms: if a piece of content is tagged with the phase term "Secondary" it cannot then be tagged as belonging to the "Talk for Writing" initiative which relates solely to the Primary phase.

Zthes files representing the navigation structure for the site were imported into the CMS to create the navigation node, enabling site designers to determine both the navigation hierarchy and the rules for surfacing content at each navigation node.

In Figure 1, initial content is tagged with terms from a range of vocabularies. A user navigating to a particular point in the navigation structure invokes a set of rules that will find and display the content defined by those rules.



Figure 1 Metadata-centred content navigation and surfacing in the National Strategies website



A vocabulary bank

Vocabularies exported from Lexaurus Editor are uploaded into Lexaurus Bank, which acts as the formal online repository for all vocabularies used within the site, becoming central to the work cycle.

Figure 2 shows how all of the component parts were assembled to construct a well-defined workflow, with Lexaurus Bank at its hub. Lexaurus Editor was used to create vocabularies. These vocabularies were exported from the Editor and uploaded to Lexaurus Bank, which in turn fed both the tagging tool (to manage the vocabularies available to people tagging content) and the CMS (to provide the navigation architecture).

The tagging tool allowed a distributed team of experts to draw content out of the CMS, apply tags as allowed by the templates and business rules, and return the tagged content to Drupal. Legacy content was migrated into the CMS, while new content was created by expert authors and deposited there directly.

The distributed nature of these services has been important to its success. The solution design supported a completely distributed infrastructure, with content authors, content taggers, metadata designers and website designers all being able to access and engage in an effective collaborative development process, regardless of their actual location.

Lexaurus Bank was located on a publicly available network service. The methods used in the National Strategies web project, and the capabilities of the Lexaurus tools, enable the site to tap into other similar repositories. Likewise, other services can make use of the vocabularies developed for the National Strategies. This design offers the opportunity for simple syndication of both content and metadata vocabularies, and the intention is to develop the National Strategies services further in distributed information sharing for education.

Kristin Cooper concludes: "We're very proud of having completed this project on time and in budget, and our partner suppliers have been vital to this. We're delighted with the positive feedback we've received since the site's launch, and that teachers now have much improved access to the resources they need. The rate with which our web content is being adopted is validation of both their quality and accessibility. It is a great endorsement of the Strategies' role in serving the Education community with a gateway to the ever-growing volume and variety of teaching material available."

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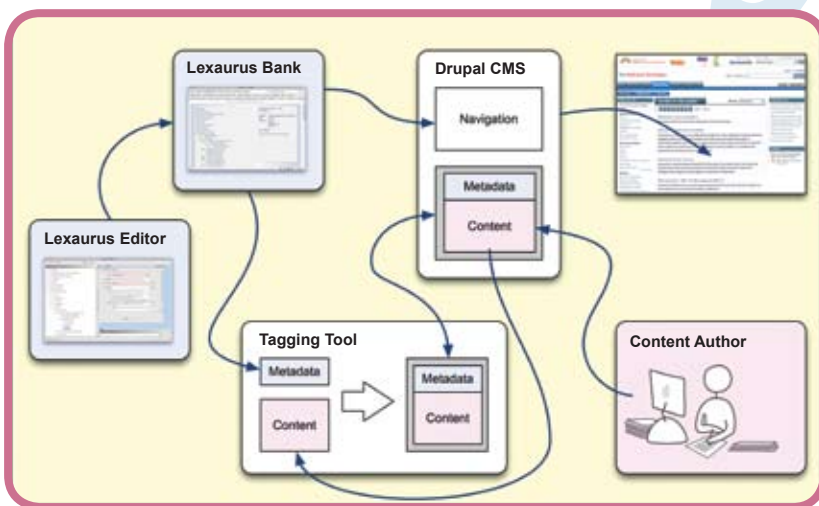


Figure 2 Work cycle for Lexaurus tools in the National Strategies website