

Enabling personal authoring and narrative making: Sustainable reuse of digital objects for interactive teaching and learning tools

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Digital humanities and the corresponding transformation of paper based artefacts into digital objects as well as digital borne objects has triggered a move away from traditional models of academic publishing. It has led to the emergence of new forms of publishing for scientific knowledge, developing practices that are more attuned with web 2.0 technologies and the digital age. There has been a shift away from the simple metaphor of the traditional academic peer-reviewed paper recreated in electronic form towards platforms that are both machine and human readable and offer a more interactive and enhanced user experience.

These new and evolving publishing forms enable interactive and immersive user experiences, and provide greater transparency of the scientific research process, methods and data. Known as enhanced publications (ePublications) or rich internet publications (RIP), they encapsulate research knowledge whilst simultaneously providing mechanisms for describing, sharing, discovering, reuse and repurposing of the scientific content (Bechhofer, Roure etc al., 2010).

With these advantages in mind, the CVCE.eu has been continuously improving its multilingual ePublication model and infrastructure, for both research and teaching and learning activities in

European Integration studies. Seven key features underpin the CVCe's ePublication infrastructure (which comprises ePublications themselves and their constituent objects):

1. Aggregations – ePublications aggregate content derived from many different publishable objects – which themselves are aggregations of individual resource objects such as texts or photographs.
2. Identity – all objects and ePublications have an individual and persistent identifier in the form of a unique URL.
3. Traceability and transparency – CVCE users must be able to trace the steps undertaken by the researcher through transparency in research methods to produce the ePublication.
4. Metadata - without descriptive machine-readable metadata the ePublications and their constituent objects could not be reused or repurposed effectively.
5. Reuse: Enabling reuse of the object in another context but with the same content for example as part of user derived ePublications.
6. Repurpose: Changing the way the object is used for example integrating it within a timeline of a map.
7. Sustainability: ensuring long-term access to objects (in relation to copyright restrictions) and through the use of persistent identifiers.

The result is a set of historical narratives describing European integration themes and topics as told by a researcher(s). The ePublications are aggregations of diverse research objects including: historical documents, press articles, photographs and other multimedia material, each with a set of descriptive metadata, publishable metadata and a unique, persistent identifier.

The ePublication platform is challenged by growing user demand for personalisation, collaboration, participation and sharing features commonplace within social technologies. To fulfil these requirements, the CVCE needs to develop new teaching and learning tools harnessing the power of repurposing and reuse of all unique objects, as well as digital tools that enable users to personalise content from across our virtual research infrastructure. The resulting Digital Toolbox facilitates customisation and personalisation of content with the mid-term goal to provide a personalised research infrastructure where users can create, author, collaborate, comment and share self-authored ePublications.



Figure 1: Screenshot of the MyPublication authoring tool interface

This paper describes the beta version of the Digital Toolbox which concentrates efforts on the design and implementation of the MyPublications authoring tool, figure1. The MyPublications tool enables users to write ePublications on topics of interest based on personalised research, teaching and learning goals by organising and restructuring CVCE resources (documents, images, treaties, photographs etc). The tool includes a presentation viewer, a simple interface where users can sequentially step through an ePublication (like a book!) and incorporates a share link feature. With such new interactive tools, the hope is to contribute to a richer educational experience through active and constructive learning processes.

References:

Bechhofer, S., De Roure, D., Gamble, M., Goble, C., & Buchan, I. (2010). Research objects: Towards exchange and reuse of digital knowledge. *The Future of the Web for Collaborative Science*, FWCS 2010), April 2010, Raleigh, NC, USA. <http://precedings.nature.com/documents/4626/version/1>