## Better, Faster, Stronger: Building a Better Dublin Core Generator

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A number of different free online tools exist for turning user input into formatted Dublin Core code. The author, as part of his MLIS degree, used these various tools to assist with his coursework. While they were all useful to some degree, a number of issues were identified which limited their overall utility.

The actual code generated by these tools was often obsolete or inconsistent. Most existing tools are designed to generate Dublin Core in HTML format; some offered RDF-formatted XML, but no tool offered to generate Dublin Core in plain XML. The lack of XML support is especially unfortunate given that recent surveys such as Kidane's (2009) have shown that XML is by far the preferred format of libraries and archives using Dublin Core today. The formatting of the generated code was also an issue. Some tools automatically included additional code such as a root element or namespace references, however none provided the option to include or exclude these additional coding elements as desired.

Another problematic area was the overall functionality and design of the existing tools. Many tools were laid out as a static HTML form without the ability to add duplicates of elements as needed. This made them of questionable use when creating metadata for items with many different creators, for example, or multiple relations to other items. Perhaps most surprisingly of all, the online tools available offered few or no useful links to other online resources. Some linked generally to the Dublin Core Metadata Initiative website, but none linked to substantial documentation on Dublin Core or resources on the vocabularies and encoding schemes supported in Qualified Dublin Core.

With these areas for improvement in mind, the author began developing a new set of tools for generating Dublin Core code. Two separate tools – one for basic Dublin Core and one for Qualified Dublin Core – are now available at dublincoregenerator.com, The tools are free and made available under a Creative Commons license for users or institutions to freely copy and modify the tool and code as desired.

The overall appearance of the tool is still similar to a typical HTML form, however the underlying functionality is a great deal more dynamic. Users can easily duplicate elements as needed by clicking a small plus sign next to each element's name. A variety of different options for formatting the code output are also provided. Users can select between HTML, XHTML, and XML for the type of code to generate. Formatting options are also available for all three languages to optionally include additional components such as a root element, version and encoding declaration, links to namespaces, and other related items.

To address the issue of insufficient references to other online resources, links were added in two different ways. First, a small question mark was placed next to each element name on the tool that linked to a guide written by Hillman (2005) hosted on the Dublin Core Metadata Initiative website. The second addition was a block of general "Resources" links aligned alongside the generator for Qualified Dublin Core. These link to online resources such as listings of language codes, freely available subject heading vocabularies, documentation on encoding schemes such as DCMI Point and DCMI Type, and other similar links of interest.

While the tools available on dublincoregenerator.com are currently functional and being used, development of the tool is ongoing and a number of additional areas for future development have

been identified. The tool could go further with assisting users in creating the relatively complex code for encoding schemes such as DCMI Box, Period, and Point. A small pop-up box, for example, could accept input from users on the desired information and automatically format and insert the needed code. Similarly, features could be added to allow users to directly look up information such as ISO language codes or subject heading vocabularies. For standards where a list of codes or terms are freely provided, a simple search functionality could be integrated to allow users to find and automatically insert desired terms without the need to visit another website. The tool could also grow to provide output in other formats such as RDF/XML, RDFa, or HTML5 Microdata. Given that the core functionality of the site has been already been successfully coded, adding additional output formats is a relatively simple task.

While ILS-integrated metadata tools will likely remain the preferred tool for catalogers, the value of quality free online tools remains. Andy Powell, one of the developers behind the DC-dot metadata tool, noted that he felt good online tools such as DC-dot are useful "more as an awareness-raising tool, demonstrating the kinds of things that [can] be done with DC" (Medeiros, 2004, p. 62). They also offer an instructional value for users just beginning to learn about Dublin Core. Glaviano (2000) observed that quality tools helped his students get the grasp of Dublin Core with less frustration than those who lacked them. This instructional value is especially salient given that recent surveys such as Lopatin's (2010) show that many libraries continue to make use of non-professionals including support staff, students, and even volunteers for assigning metadata to items in their collection. By supporting and collaborating on free tools for working with Dublin Core, we can help engage people new to the standard and make their first attempts to work with Dublin Core rewarding and successful.

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